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## THE SURGICAL TREATMENT OF PROLAPSE OF THE UTERUS

RICHARD W. TeLINDE, M.D.
BALTIMORE

There is no subject in gynecology which can evoke more discussion among gynecologists than the treatment of uterine prolapse. In several clinics in this country vaginal panhysterectomy is done almost routinely to cure this condition; in others the Watkins interposition operation is the standard treatment, in others the Manchester operation is done and in still others extensive vaginal plastic work is combined with some type of intra-abdominal suspension. In general there has been a trend in the past two decades toward doing the entire procedure by the vaginal route unless intrapelvic disease necessitates laparotomy. It is my opinion that one should not approach the subject with a fixed plan of operation. Each case should be judged and treated as an individual problem. In selecting the best operative procedure in an individual case several factors must be taken into consideration. The most important of these factors are:

The general physical condition of the patient.
The desirability of preserving menstruation.
The desirability of preserving the childbearing function.
The degree of descensus.
The condition of the cervix and corpus uteri.
The presence of, and degree of, cystocele.
The presence of, and degree of, rectocele or enterocele.

All of these factors will be considered in discussing the various operative procedures discussed in this paper for the cure of prolapse and allied conditions.

As I express my opinion on the various operations and their indications I realize fully that there is room for honest difference of opinion on this subject. There is no doubt that in many cases equally satisfactory results may be obtained by more than one method. If this were not true there would not be such strong adherents of the different types of procedure. It is assumed that each surgeon who strongly defends a particular operation does so believing that that procedure is giving satisfactory results in his hands. There is no doubt that the skill of the individual operator, in a particular operation, is a great factor in his results. But no matter how skilful one may become in a favorite procedure one should never permit one's enthusiasm for it to overcome one's judgment as to its indications.

From the Department of Gynecology, Johns Hopkins University and Hospital.
Read before the Section on Obstetrics and Gynecology at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 15, 1944.

### ANATOMIC CONSIDERATIONS

In discussing the cure of prolapse of the uterus it is advisable to consider, first, the supporting structures which have failed to hold the uterus in correct position and how best to utilize these supporting structures in restoring the uterus to its normal position or in supporting that portion of the uterus which is permitted to be retained and/or the vagina.

The structures which are concerned in maintaining the uterus in normal position are:

The round ligaments.
The uterosacral ligaments.
The bases of the broad ligaments (cardinal ligaments; ligamentum transversalis colli, Mackenrodt).
The fascia lying between the anterior vaginal wall and the vagina (subvesical fascia or pubovesicocervical fascia).
The fascia lying between the posterior vaginal wall and the rectum.
The floor of the pelvis (the pubococcygeal fibers of the levator ani muscles).

The function of the round ligaments is to draw the uterus forward to its normal anatomic position after it has been displaced backward physiologically by bladder distention or by pregnancy. Once returned to its normal position forward, the intra-abdominal pressure on the posterior surface of the uterus holds it forward. Increased intra-abdominal pressure, such as that caused by straining at hard work or defecation, causes slight temporary descent of the anteposed uterus. If the supports of the uterus are adequate, the uterus promptly returns to its former level. When the uterus is congenitally retroposed, or when the round ligaments fail to bring it forward after physiologic displacement backward, intra-abdominal pressure tends to force the uterus downward into the vagina like a piston in a cylinder. If the other supporting structures are sufficiently firm, the uterus may be maintained at its normal level despite the mechanical disadvantage of retrodisplacement, but a greater strain is put on the other supporting structures than when the uterus is anteverted.

The uterosacral ligaments, which are part of the endopelvic fascia lying subperitoneally, extend from the cervix back to the sacrum; they hold the cervix back and also aid in holding it up. Congenitally long ligaments, or ligaments which have lost their tonus as the result of pregnancy, permit the cervix to be displaced forward and downward; this allows the corpus to be displaced backward until the axis of the uterus and that of the vagina coincide. Intra-abdominal pressure then can work to advantage in forcing the uterus down in the vagina.

The bases of the broad ligaments are also part of the endopelvic fascia and play an extremely important role in maintaing the uterus at its normal level. These cardinal ligaments, attached to the sides of the intra-abdominal portion of the uterine cervix, fan out laterally as they approach the sides of the pelvis to which they

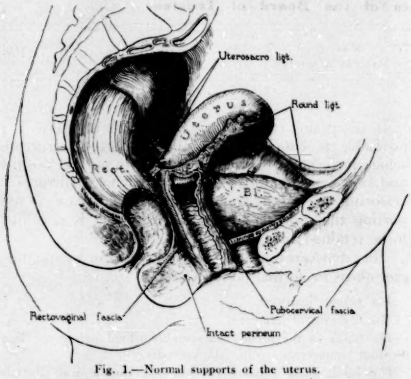



Fig. 1.—Normal supports of the uterus.

are attached. One must assume a congenital factor of weakness of these ligaments in some cases of prolapse, for occasionally one sees them greatly attenuated in women who have neither done much physical work nor borne children. In most cases in which the cardinal ligaments fail, however, childbearing and physical work play a major role. The softening effect of the pregnancy hormones, the weight of the pregnant uterus and the increased intra-abdominal pressure of hard work all tend to stretch the cardinal ligaments and permit the uterus to drop to a permanently lower level.

The normal nulliparous vagina is maintained in position as a semirigid structure by a strong fascial sheath which encases the mucosa. Anteriorly this fascia lies between the bladder and the vagina and stretches from its origin at the symphysis pubis beneath the bladder to be inserted into the anterior wall of the cervix. The upper part of this fascia is easily seen when the bladder is dissected down in performing an abdominal hysterectomy. Posteriorly similar fascia separates the vagina from the muscular wall of the rectum, giving support to the vaginal tube and preventing the anterior rectal wall from bulging into the vagina. When these fascial structures are torn and stretched by childbirth, the vaginal wall becomes redundant and flabby; rectocele and cystocele develop. The weight of the uterus, especially if it is retroverted, aggravates the sagging vagina, and when prolapsus becomes complete the vagina may become entirely everted.

Finally, there is the muscular floor of the pelvis to be considered; it forms the foundation on which the vaginal tube rests and also the foundation on which the uterus rests ultimately. Tearing and separation of the pubococcygeal fibers of the levator muscles weaken this floor and widen the aperture through which the vagina and, eventually, the uterus may descend. For a better understanding of the factors concerned in prolapse of the uterus the reader is referred to the diagrams shown in figures 1 and 2.

All of these structures play a part in holding the uterus in its normal position; some or all of them are utilized in the various operations discussed here, designed to restore support to the pelvic structures.

Patients who present themselves with uterine prolapse and allied conditions may be grouped for treatment according to the various factors mentioned in the first part of this paper. I have grouped these patients and have indicated the methods of treatment which I believe to be the most satisfactory.

Young women suffering from various degrees of prolapse associated with the allied conditions of cystocele, relaxed vaginal outlet and rectocele frequently desire more children. Their wishes must be respected and they must be treated in such a manner as is compatible with future pregnancies. If their symptoms are not too pronounced they should be encouraged to complete their family and then return for the surgery later. Often a pessary can be used to advantage as a temporary expedient. The reasons for deferment of surgery are twofold: First, radical plastic vaginal repairs will suffer injury at subsequent deliveries; second, the best types of operation for prolapse are not compatible with future pregnancy. If the symptoms caused by the prolapse are so severe as to be almost incapacitating, surgery may become necessary. In such a case one has no choice but to perform the necessary plastic work in the vagina and then do some form of intra-abdominal round ligament suspension. I prefer a modification of the Gilliam suspension during the childbearing period, often combining it with shortening of the uterosacral ligaments and/or advancement of the bladder peritoneum onto the uterus. I perform a round ligament suspension for prolapse only when forced to in young women who insist on further pregnancies, realizing full that any type of round ligament shortening is not the best operation for uterine prolapse and that eventual recurrence of the descensus is probable.

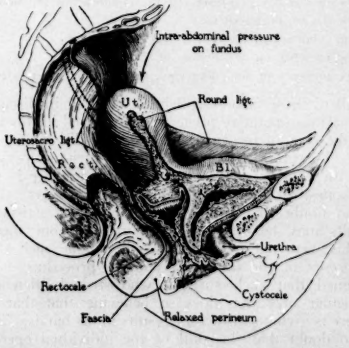



Fig. 2.—How failure of normal supports permits descent of uterus, cystocele and rectocele formation.

There is another group of relatively young parous women who present themselves with various degrees of descensus associated with relaxed outlet, rectocele and cystocele. These women have had as many children as they desire and are willing to forego future pregnancies. In fact, often they welcome sterilization, particularly when they can be assured of a satisfactory

and permanent result. When the descensus is of first degree a Manchester operation with sterilization is a quite satisfactory procedure. It is recognized that in many clinics the Manchester operation is done for prolapse of more pronounced degree but, as will become evident later in this paper, I believe there are operations which give firmer support in such cases. Although in the Manchester clinic their operation is done in women expecting to have more children, Shaw reports only 27 pregnancies following 549 operations, and of these 18.5 per cent had a recurrence of the prolapse. In addition to this the cervical amputation which is part of this operation is objectionable from an obstetric standpoint.

Fig. 3.—Watkins transposition operation: Inset shows fundus being sutured beneath pubic rami. The larger picture shows fundus sutured in place. An additional mattress suture has been placed in the midline to prevent prolapse of urethra or trigone. Excess vaginal mucosa is being trimmed off.

In this group of relatively young women suffering from a second or third degree prolapse who do not desire more children, I find the Spalding-Richardson composite operation of special value. The technic of this as yet little known operation is described later in this paper. In addition to giving very satisfactory support, it automatically sterilizes and thus prevents future deliveries from breaking down the extensive plastic work. I definitely object to the Watkins transposition operation in this group of young women. Too many years lie ahead in which the transposed uterus may develop benign or malignant disease, and when this occurs the uterus is removed surgically with difficulty.

The largest group of women who present themselves with uterine prolapse and vaginal relaxation do so after 40. Here again if only first degree prolapse is present the Manchester operation serves very well in those cases in which the uterus is healthy. When second or third degree prolapse exists and the patient is a good operative risk I prefer the Spalding-Richardson procedure. This operation, however, is rather a prolonged one and should not be done if the physical condition of the patient is such as to make an extensive operation ill advised. In those cases the Watkins transposition operation is quite satisfactory, provided the uterus is healthy and of the proper size. It is especially satisfactory when the cystocele is very large and the uterus neither too large to be interposed nor too small to plug effectively the opening through which the bladder has herniated (figs. 3 and 4). It is recognized that the leaving of the uterus as a possible site of origin of future cancer is somewhat of a disadvantage, but with the cervix amputated the possibility is not great; the disadvantage is more than compensated for by the shortness of the operation in those women for whom a lengthy operation is contraindicated.

When prolapse and its allied conditions exist with benign uterine disease, such as small fibroids or functional bleeding, vaginal hysterectomy is in most instances the operation of choice. However, since the small fibroids are often situated well above the region of the internal os one can often amputate the corpus quite satisfactorily and perform a Spalding-Richardson operation. Since my results in supporting the vagina have been better with the Spalding-Richardson operation I frequently do this in those cases which would be treated without hesitation by vaginal hysterectomy in other clinics.

There is still another group of cases in which gross intrapelvic disease, such as large fibroids or ovarian tumors, makes laparotomy a necessity. In such cases one has no choice except to perform a combination of the plastic operation and the necessary intra-abdominal surgery. In this group occasionally ventral fixation of the uterus or cervical stump is an excellent procedure.

When second or third degree descensus requires treatment in elderly women who are not preferred surgical risks but who are considered candidates for very limited surgery, I have found the LeFort colpocleisis quite satisfactory if the patient has no further interest in sexual relations. If the patient does not desire to terminate her sexual life a fairly satisfactorily functioning vagina can be preserved by performing a partial colpocleisis and perineal repair as described by Goodall and Powers.

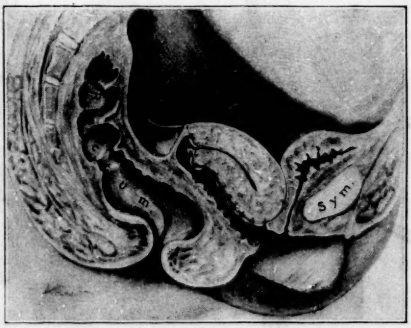
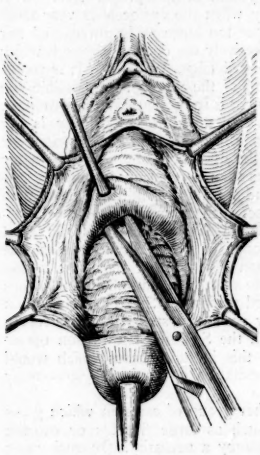


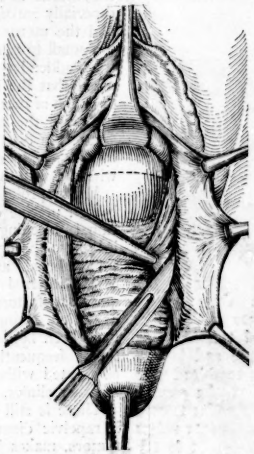

Fig. 4.—Watkins transposition operation: Transposed uterus fixed in its new position. Increased intra-abdominal pressure only serves to press fundus more snugly against the urethra, which is supported by the fundus.

Finally, the elderly woman with prolapse who is too poor a risk to permit any surgery can usually be made

comfortable with some type of pessary. It is not within the scope of this paper to discuss the indications for and proper use of the various types of pessaries.

Since the Spalding-Richardson operation for prolapse is not generally known and since I have found it such a satisfactory procedure, the technic is here described:

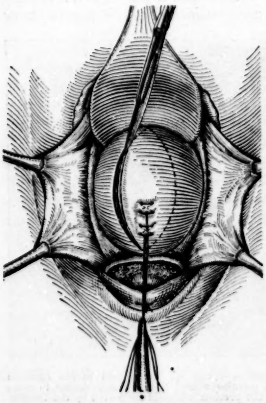


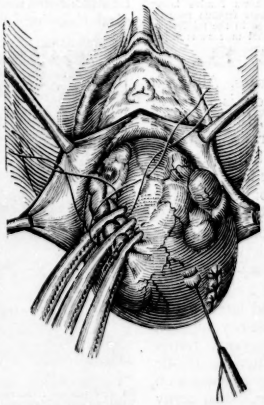


Spalding-Richardson operation for uterine prolapse:

Fig. 5.—An inverted T shaped incision has been made and flaps have been dissected lateralward. Bladder is being dissected free from its attachment to the cervix.

Fig. 6.—Vesicoperineal fold of peritoneum has been exposed. Transverse dotted line shows line of incision. Fascia is being dissected from flaps of vaginal mucosa.





Spalding-Richardson operation for uterine prolapse:

Fig. 7.—Fundus is being delivered by traction sutures. Because of its large size in this case a wedge shaped piece of myometrium is being excised. Cervix has been amputated.

Fig. 8.—Corpus is completely delivered. Round ligament, tube and ovarian ligament are clamped en masse, cut as indicated by dotted line and doubly ligated.

With the patient in the lithotomy position and after the usual vaginal cleansing the anterior lip of the cervix is grasped and the cervix drawn to the outlet. A mucosa clip grasps the urethral meatus and slight traction is made on it anteriorly. If the cystocele is large, the midline of the anterior vaginal wall is grasped with a succession of mucosa clips from the urethral meatus to the cervix so that the mucosa may be put on a stretch. A transverse incision is made through the reflexion of the anterior vaginal mucosa onto the cervix about 1 or 2 cm. from the external os. The point of a Mayo scissors is inserted beneath the mucosa in the midline and the anterior vaginal wall is separated from the bladder in the midline by alternately opening and closing the scissors. The mucosa clips are successively removed as each is reached. As each segment of 3 or 4 cm. is separated, the vaginal mucosa is cut in the midline, ultimately forming the usual inverted T shaped incision, as in the first step of the cystocele operation.

The bladder is then dissected from its attachment to the cervix, first with the scissors, and then a line of cleavage is found which may be followed with the finger until the vesicouterine pouch of peritoneum is reached (fig. 5).

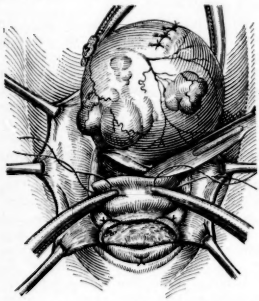
The edges of the vaginal flaps which have been grasped with mucosa clips are spread out by assistants and the pubovesicocervical fascia is dissected from each flap (fig. 6). In the midline this fascia is quite thin, but laterally it is usually quite sturdy.

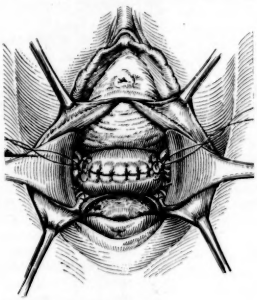
The cervix is next amputated. Different technics are permissible for this, but I prefer the technic as shown in figure 7. The posterior lip of the shortened cervix is covered with a flap of mucosa which has been dissected free and then drawn into the canal with a mattress suture. The cervical amputation is much less bloody if the cervical branches of the uterine vessels are first ligated bilaterally.

The vesicouterine pouch of peritoneum is incised as indicated by the dotted line in figure 6 and the fundus delivered. I have found that traction sutures placed at successively higher levels in the uterine corpus are very useful for this. If the fundus is large and delivery difficult it is usually a drier procedure to make the delivery by traction sutures than by tenaculum. If the fundus is small it may be easily and quickly delivered either by traction sutures or by tenaculum. If the fundus is so large that it is brought forth with difficulty, a wedge shaped piece may be excised as in figure 7.

The uterine end of the round ligament, tube and ovarian ligament are triply clamped *en masse*, cut and doubly ligated with number 2 chromic catgut. This is repeated on the opposite side (fig. 8). A supravaginal amputation is done at the desired level. Before

making the amputation, the ascending uterine vessels are clamped and ligated below the point of amputation as shown in figure 9. It is well to make this a V shaped cut, as is done in abdominal supravaginal hysterectomy, to facilitate closure. Closure of the stump is done with interrupted or figure 8 stitches of numberber 2 chromic catgut as shown in figure 10. The cut ends of the tubes and of the round and ovarian ligaments are sutured to the stump, as indciated in figure 10.





Spalding-Richardson operation for uterine prolapse:

Fig. 9.—Corpus is being amputated from cervix. Uterine vessels are ligated as indicated by sutures.

Fig. 10.—The incision in the upper portion of the cervix is closed with interrupted sutures. The tubes, ovrian ligaments and round ligaments are sutured to the cervix.

The isthmic portion of the uterus which remains is shown in the diagram in figure 14. It will be noted that it has an ample blood supply. The uterosacral and bases of the broad ligaments are attached to this remaining segment, and these structures are utilized in building up support of the vagina.

The edge of peritoneum formed by entering the vesicouterine peritoneal pouch is then sutured to this remaining portion of the uterus. It is well to make the suture posterior to the incision line in the uterine musculature so that, in case there is any postoperative hemorrhage, the bleeding will be external and not intraperitoneal.

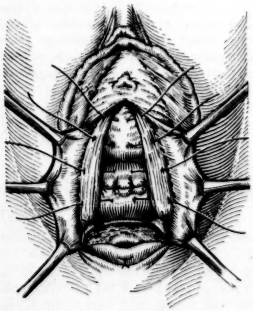
The pubovesicocervical fascia is then brought together in the midline by interrupted sutures of number 0 chromic catgut beginning beneath the urethra, continuing beneath the base of the bladder and finally covering the stump of the uterus (fig. 11).

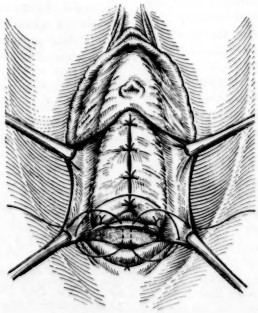
The anterior lip of the cervix is then covered over with vaginal mucosa, flaps of which have been trimmed down to the proper size for closure (fig. 12). The closure of the vaginal incisions laterally, and of the midline incision, completes the operation (fig. 13).

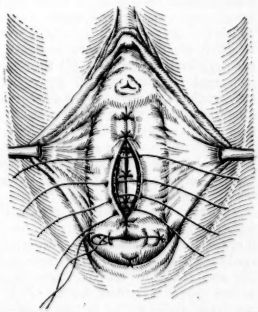
The pelvic floor and rectocele are then repaired as indicated by the degree of relaxation and size of the rectocele. If an enterocele is present, it likewise is repaired.

In the private service of E. H. Richardson and of R. W. TeLinde and in the public ward service of the Johns Hopkins Hospital the operation has been performed on approximately 100 women. Many of these have been done too recently to be of value in a follow-up study. About a year and a half ago we got back for questioning and examination 33 women who were operated on from five years to six months before. All 23 private patients in the group had excellent anatomic results and were completely relieved symptomatically. Among 10 public ward patients there were 3 who did not admit complete relief. In 2 of these there was a perfect anatomic result, but in the third there was a moderate cystocele with slight stress incontinence. Among these public ward patients there were, of course, the overworked women with few social advantages, few intellectual resources and multiple complaints. Since the anatomic result was perfect in 2 of these 3 women, I feel that it is scarcely justifiable to attribute their incomplete relief to the operation.

The Spalding-Richardson operation meets the desired objective of an operation for uterine prolapse when further pregnancies are not desired. The diseased portion of the cervix is removed, thus removing a source of leukorrhea and a potential site of neoplasm.







Spalding-Richardson operation for uterine prolapse:

Fig. 11.—Pubovesicocervical fascia is to be approximated beneath urethra, base of bladder and cervical stump.

Fig. 12.—Fascia has been completely approximated, and anterior lip of shortened cervix is about to be covered with the split flap of vaginal mucosa.

Fig. 13.—Final sutures approximating the vaginal mucosa, which has been trimmed to appropriate proportions.

The corpus uteri is removed and with it the danger of endometrial cancer as well as fibroids. The bases of the broad ligaments and the uterosacral ligaments have not been crushed as in vaginal hysterectomy and are preserved for support of the vagina. Our follow-up study shows that the vagina is well suspended and is of normal depth and caliber.

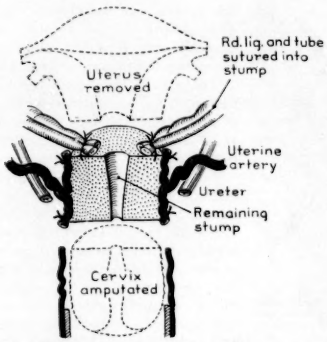



Fig. 14.—Spalding-Richardson operation for uterine prolapse: Diagram indicating the portion of the uterus that remains. Note that blood supply is intact.

My chief purpose in describing this operation and its results in detail is to stimulate interest in this relatively new operation. Only by the widespread use of any new operative procedure can its general usefulness be evaluated.

101 West Read Street.

## ABSTRACT OF DISCUSSION

Dr. George H. Gardner, Chicago: Every one agrees that it is desirable to approach the problem of treating uterine prolapse with an open mind: i. e., no single operation is applicable to all cases, and each patient must be individualized. Dr. TeLinde mentions many factors which should be considered in selecting the most appropriate operation, viz. (1) the patient's general physical condition, (2) the advisability of continuing the menstrual phenomenon, (3) the desirability of preserving the childbearing function, (4) the degree of descensus, (5) the condition of the cervix, (6) the condition of the corpus, (7) the degree of cystocele, (8) the degree of rectocele and (9) the presence and/or degree of enterocele. All of us would do well to consider each of these factors systematically before operating on any prolapse. Then we could not routinely employ any one operative procedure on every patient. Dr. TeLinde mentions the various ligamentous and fascial structures responsible for maintaining the uterus in its normal position. However, we doubt if he has emphasized adequately the importance of the cardinal or Mackenrodt's ligaments in the problem of prolapse. He also refers to various stages of prolapse as first degree, second degree and third degree. It is regrettable that he does not define these terms, so that those of us from the hinterland could understand what they denote on the Atlantic seaboard. I question the advisability or referring to the Spalding-Richardson operation for prolapse as a new procedure. To my knowledge vaginal supracervical hysterectomy with extensive plastic repair has been employed in Chicago for many years in the correction of prolapse. One has difficulty in recognizing the advantages of this operation over removal of the uterus in toto. Consequently I wish that Dr. TeLinde had told us more about the postoperative course of these women. I am not pleased with the incidence of complications after vaginal hysterectomies with extensive plastic repairs that I have performed to correct a uterine prolapse complicated by pronounced cystocele, rectocele and enterocele. Too many of these women have a febrile convalescence, and a considerable percentage have vaginal drainage about a week after operation. I would be tempted to employ the Spalding-Richardson operation more frequently if Dr. TeLinde could give assurance that it is rarely followed by these annoying complications.

Dr. Roland S. Cron, Milwaukee: Dr. TeLinde presents the problem of the surgical treatment of prolapse of the uterus in a practical, logical and scientific manner. One must agree with his statement that the type of operation performed should fit the needs of the individual case. Certainly no one operative procedure should be utilized as a routine. One hundred consecutive case histories from my private practice dated before 1942 showing various degrees of uterine prolapse with associated pathologic conditions in the pelvis have been reviewed. It was found that vaginal hysterectomy was the operation of choice in 47. Of this group 19 were classified as having a third, 17 a second and 4 a first degree descensus. The average age was 56. The next largest group, comprising 18 patients, 1 of whom had a first, 7 a second and 2 a third degree prolapse complicated by extensive cystocele formation were served by the Watkins transportation operation. The average age was exactly the same. The Manchester Fothergill operation with appropriate plastic additions was used in 10 per cent of the cases. This was the procedure of choice when the lesser degrees of procidentia and cystorectocele formation were found to be present in the patient of more advanced age. A modified type of Simpson suspension of the round and approximation of the sacrouterine ligaments combined with a vaginal plastic procedure was considered to be sufficient for 9 patients, all in the childbearing age and presenting a similar degree of procidentia. Another 10 per cent of the patients, well advanced in years, experienced a cervical amputation with plastic correction of the bladder and posterior vaginal walls. The remaining 6 patients had amputation of the cervix and fundus, plus pleating of the bladder fascia and perineorrhaphy according to the Spalding-Richardson technic. Neither the LeFort colpocleisis nor ventral fixation of the uterus was utilized in this series. Suturing of the fundus to the anterior abdominal wall is most unphysiologic, and frequently the adjacent adnexa become involved in a mass of adhesions. The procedure often fails to correct permanently the prolapse and in itself affords no support to the cystocele. As a matter of fact, polyuria and dysuria often follow. The best end results were uniformly obtained following vaginal hysterectomy. Failures have been frequently observed following the Watkins technic. Excellent results were obtained with the Manchester Fothergill operation. The Spalding-Richardson principle should be an ideal procedure for the lesser degrees of prolapsus. Has the author obtained the same satisfactory results in the patient presenting complete procidentia with huge cystocele formation? Following the correction of a large cystocele, a previously competent urethral sphincter may become incompetent and stress incontinence may appear. A Kelly stitch or Berkow type of urethral elongation, angulation and reconstruction operation will usually correct this annoying symptom.

Dr. J. E. Cannaday, Charleston, W. Va.: I have found that in some cases of uterine prolapse, especially those in which the floor of the pelvis is badly herniated, a definite suspension and fixation of the cervix may possess certain advantages. The procedure that I have carried out occasionally has been about as follows: 1. Preliminary conization of the cervix is done for the purpose of eliminating as far as possible the possibility of cancer. 2. Any indicated vaginal repair is done. 3. After subtotal hysterectomy the cervical stump is drawn upward and firmly attached to the periosteum of the tuberculum pubis by the use of a strip of fascia lata or, preferably, a strip of skin from which the epidermal layer has been removed. This strip of cutis is taken from the edge of the abdominal incision. It makes most satisfactory fixation material. In my experience no recurrence of prolapse has been noted. I believe this method gives permanent support.

Dr. John M. Fallon, Worcester, Mass.: Of some 600 operations for prolapse done by my father and myself only a few were Richardsons, but I liked the operation. One discusser asked what advantage it had over vaginal hysterectomy. It

leaves the suspensory apparatus attached to the uterus although giving enough exposure to tighten it if needed. That may be an advantage. It may be some disadvantage that carcinophilic cervical tissue remains. The difference between the Richardson, vaginal hysterectomy, interposition or Manchester is small compared to the difference between any one of those and abdominal suspension. Vaginal operations go to the site of the disease, the suspensory apparatus. Abdominal operations suspend a symptom. Results are what one would expect. I summarized some of them in the *New England Journal of Medicine* in 1939. The principle of vaginal approach, although still not universally accepted, was proved long ago. The possible exception to the rule of vaginal operations is the woman who will have more children. Most of us still use the suspension operation, but I prefer the Manchester done without amputation of the cervix. This is another little known operation first proposed, as far as I know, by J. W. A. Hunter of Manchester in the *British Medical Journal*, June 18, 1938. You might be interested in still another excellent operation which seems relatively unknown: a colpocleisis by Labhardt of Basel (*Schweiz. med. Wchnschr.* **64**:643 [July 14] 1934). It has replaced the LeFort (more properly Neugebauer) in my regard. A perineorrhaphy continued upward across the introitus to the level of the urethra, this Labhardt avoids the Neugebauer's pull on bladder and urethra and, being more outside the body, is better adapted to the worst possible situations, the old and feeble who are natural candidates for colpocleisis.

DR. CHANNING W. BARRETT, Chicago: Prolapse is a wandering of organs in the abdomen, usually downward. In the man and in four footed animals it is downward, but in man it is toward one wall, the caudal wall, and in the four footed animals it is toward the ventral wall. The stomach, the transverse colon and the gallbladder are prolapsed because they have wandered downward, but eventually they might come through the umbilical opening and become a hernia. We should be foolish to continue the consideration of this as a prolapse and talk about operating on prolapse of the stomach when it was down in the umbilical opening, but that is just what we are doing with these other conditions. They are prolapsed as long as they are downward, and any structure may travel downward, and eventually many of them might come to the pelvis and lie against the pelvic floor, but when they find an opening and go through that opening they are no longer prolapse in the clinical sense. They become something altogether more important. They become hernias, and as hernias they take on new phases of disturbance. Their circulation is disturbed. Their pedicle is disturbed. Their function is disturbed, and so we are dealing with the condition known as hernia. In a herniation shall we leave the uterus in or shall we take the uterus out? That depends on the pathologic condition in the uterus. Nearly all herniations of the uterus can be saved if the age of the patient and the pathologic condition in the uterus demand their being left. Is this herniation severe enough so that the bladder is herniated badly and the rectum is herniated badly and they must be attended to? If so, we must do something to hold the bladder up and to hold the rectum up and either take the uterus out or put it back in position. There are different things to cure the hernia of the uterus. First we must give a good pelvic floor, that is, the caudad wall to the abdomen. Next we must change the vaginal direction so that it goes from the symphysis back to the hollow sacrum, because it is a principle of support to have that wall at an oblique direction. Next we must lessen the vaginal opening so that the vaginal wall will not prolapse through there. The ring for the hernia is in the pelvic floor. The vagina, the uterus and the rectum are a part of the herniated structure.

DR. U. J. SALMON, New York: The Spalding-Richardson operation is a valuable addition to gynecologic surgery. I should like to draw attention to a surgical procedure for the cure of prolapse which is technically simpler and which has been used with consistently good results at the Mount Sinai Hospital of New York during the past twelve years, viz. the parametrial fixation operation. This is a modification of the Donald-Fothergill-Manchester operation, which was introduced by Dr. Robert T. Frank in 1932. In 1937 I reported in the *American Journal of Obstetrics and Gynecology* a series of 254 cases of prolapse (consisting of 126 cases of first degree, 55 cases of second degree, 35 cases of third degree and 8 cases of prolapse of the cervical stump) which had been treated by the parametrial fixation operation during the preceding five years. There was only 1 case of recurrence of the prolapse in this series. In the intervening seven years the same operation was performed in approximately 200 more cases, with approximately the same satisfactory results. The operation has a number of advantages over other surgical operations for prolapse: 1. The comparative simplicity of technic permits of its standardization and facilitates its being taught to residents. (During the past several years the majority of operations were performed by the residents or junior staff members.) 2. Morbidity and mortality are low. 3. The coital function of the vagina is not compromised. 4. The operation does not preclude the possibility of subsequent pregnancy. 5. If necessary the oviducts can be ligated at the same time by the vagina. It seems to me that the parametrial fixation operation approaches very closely the theoretical desiderata of the ideal operation for prolapse, viz., anatomic as well as physiologic restitutio ad integrum with a minimum of risk to the patient.

DR. R. C. AUSTIN, Dayton, Ohio: My efforts to obviate the shortcomings of the vaginal hysterectomy began a few years ago and I have done 79 of these procedures. The results have been highly satisfactory, far more satisfactory than any type of procedure that I have done, and having been brought up on the vaginal hysterectomy and the interposition operation, I feel that I can make a comparative statement. Some shortcomings or some criticisms of this procedure have been its technical difficulties. It is not too technical. The average time for the operation is about an hour and fifteen minutes. Another criticism has been that the cervix that is left remains the site of a possible neoplasm. Dr. TeLinde did not emphasize that he usually cones out the cervix, as we usually do. I have been highly pleased with the results of this operation.

DR. C. GORDON JOHNSON, New Orleans: The importance of correcting the pelvic floor has not been thoroughly emphasized, and I am quite sure that the majority of instances of recurrence of uterine prolapse that have followed the simple abdominal procedure are due to the fact that the relaxation of the pelvic floor has not been recognized and has not been adequately taken care of. The utilization of shortening of the uterosacral ligaments has not been emphasized. This is of importance in keeping the cervix in its proper place. In New Orleans we use a modified form which we call a "Simpson-Kelly suspension." The Simpson part is the shortening of the round ligaments, bringing them through the inner inguinal ring and suturing them to the posterior surface or the undersurface of the anterior rectal sheath. We use the Kelly part in bringing the uterosacral ligaments together and suturing them to the posterior peritoneum of the lower uterine segment. This is to keep the cervix in place. For a prolapse, second or third degree, in elderly women or in women past 35, I believe that the vaginal hysterectomy is the procedure of choice. We find no difficulty in doing it; even our residents at the Charity Hospital in New Orleans, where we have an extensive service, do this operation. In the young woman we rarely do anything other than the Simpson-Kelly suspension. We have used it for the last fifteen years and have been successful with it. This procedure was used by the late Dr. C. Jeff Miller, from whom I learned it.

DR. K. M. MARTZLOFF, Portland, Ore.: I just want to ask Dr. TeLinde two questions which I think will be informative for all of us. Do you suture the transverse cervical ligaments? and Do you suture the stump of the cervix to the pubic arch between the urethra?

DR. RICHARD W. TELINDE, Baltimore: I do want to tell Dr. Gardner that never since I have been in Baltimore have I routinely used the interposition operation for prolapse. Dr. Richardson formerly did the vaginal hysterectomy for prolapse and it was dissatisfaction with the vaginal hysterectomy that made him turn to this new operation. I don't have an opportunity to follow up the Chicago vaginal hysterectomies often, but a few weeks ago I saw a woman who had had a vaginal hysterectomy in Chicago by a noted surgeon. She complained bitterly of shortening of the vagina. I have never heard of that complaint with the Spalding-Richardson operation. Dr.

Gardner asked about the postoperative course of these patients. I don't believe it is any different than that after vaginal hysterectomy. In our hundred cases, we have no mortality to date. Of course, we are sure we shall not keep that up. I have had 2 women in fairly profound shock due, I believe, to difficulties in delivering the uterus, but one might have had those same difficulties if one was doing the vaginal hysterectomy. The ultimate results were really excellent in the 33 patients whom we had back for examination about a year and a half ago; some of these had had operations done as long as four or five years before. Twenty-six of these had been done by private practitioners and the results, as far as I could see, were perfect. The rest had been done by the house staff, there was 1 that had a recurrent cystocele and 2 others failed to admit complete symptomatic relief, although anatomically the vagina seemed to be quite normal. I agree with everything that Dr. Barrett has said about hernia. This is a hernia. I neglected to say much about the perineal repair part of the operation. I took that for granted since that is an old story with most of us and time is limited. There have been no ureteral injuries in this operation in our hands. We stay away from the ureters, which are close to the uterus just about at the point where the uterine vessels approach the uterus. The uterine vessels are left intact to supply the cervical stump. Dr. Martzloff asked two questions: Do we ever bring the stump up under the symphysis? Yes, we do. When there is a large cystocele I think it is an excellent thing to do, because then one gets more of the advantages of the old interposition operation without the disadvantages. The other question was whether we ever suture the cardinal ligaments anterior to the stump. When there is a pronounced descensus I frequently do that. By so doing one can have all the advantages of the Manchester operation without the disadvantages of cutting and crushing the bases of the broad ligaments.

## HIGHLIGHTS ON EPIDEMIC DISEASES OCCURRING IN MILITARY FORCES

### IN THE EARLY PHASES OF THE WAR IN THE SOUTH PACIFIC

COMMANDER JAMES J. SAPERO (MC), U.S.N.
AND
LIEUTENANT COMMANDER FRED A. BUTLER (MC), U.S.N.

Early in 1942 American military forces began their countermove to stem the rapid Japanese advance in the Pacific. The accomplishment of this task required the military occupation of numerous widely separated tropical islands throughout a vast subequatorial region and involved the establishment of bases on islands known to be hyperendemic foci of disease. There followed, as a consequence, a series of outbreaks of tropical diseases in epidemic proportions of a magnitude and potential threat seldom if ever exceeded in American military history.

Many factors contrived to create a situation which would favor a wide-scale outbreak of disease in the very early phases of the Pacific campaign. The initial occupation, of necessity, took place with a haste which did not permit carefully considered plans of disease prevention. The newly occupied islands were known to be endemic centers of an impressive array of threatening diseases, such as malaria, dengue, dysentery, scrub typhus, yaws, filariasis, tuberculosis and leprosy. Many of these, unfortunately, were diseases presenting problems of prevention with which most medical officers were almost totally unfamiliar. In addition, in certain instances, intelligent prevention was impossible, for the mechanism of transmission was not known to medical science. Most of the diseases were epidemic in nature. They could be expected to disable large numbers of men under conditions of combat and at the very time in which control would be most difficult. Further jeopardizing disease control at first was the underlying situation, in which almost the total efforts of the newly occupying forces had to be directed toward even more urgent matters, such as obtaining food and ammunition and of digging in to fight the enemy.

A consequence of this situation was that in the early phases of the war almost all troops based in the Pacific suffered from one or more epidemic diseases. The lessons learned from these early experiences, however, were not unheeded. The end result was that, in spite of all the obstacles faced, epidemic diseases soon came under control. It is believed that history will in time show that Allied successes in disease control so greatly exceeded those of the Japanese that a major advantage in the war was thereby gained.

At present only some of the highlights of the story of the various epidemic diseases which occurred can be told. This report, in particular, encompasses only the epidemic disease experience in the South Pacific Command Area. This included New Caledonia, the New Hebrides, the Solomons, the Fiji Islands and the Ellice, Samoan and Tonga Island groups.

The epidemic diseases of most significance which plagued troops were, roughly, in order of importance, malaria, dysenteries, dengue, Bancroft's filariasis, scrub typhus and infectious hepatitis. Dysentery was encountered throughout all the island groups. Dengue was widespread but was characterized by distinct, focal outbreaks. Filariasis, caused by Wuchereria bancrofti, appeared in epidemic form in troops for the first time in history. It occurred in significant numbers only in the Samoan and adjacent islands despite the existence of the disease in natives in almost all the island groups under consideration. Scrub typhus was confined to a relatively few cases reported from New Georgia and Bougainville. Infectious hepatitis appeared with a spotty geographic distribution.

#### MALARIA

In importance, malaria far exceeded that of any other of the epidemic diseases. The large number of individuals contracting this disease resulted from the fact that the major military engagements were fought on some of the most highly malarious islands in the world.

That the rather remarkable limitation of endemic malarious areas in the South Pacific fortunately spared many island groups the burden of malaria prevention is important to bear in mind.

The most instructive experience in the problem of malaria is the situation which occurred on one of the first occupied malarious bases in the early spring of 1942. With the unstemmed advance of the Japanese apparently greatly menacing this occupation, a rather hopelessly small American force dug in for a bitter fight. What happened to this force so far as regards malaria serves as a classic example of what may be expected to occur when effective control is lacking.

All the elements which could predispose to a serious malaria situation participated. The site chosen for bivouac areas and military activities was one well known by the residents of the island to be the most malarious spot of the entire island. Into this area of

Commander Sapero was malaria and epidemic disease control officer, South Pacific area, for period June 1942-January 1944.
Lieutenant Commander Butler was assistant malaria and epidemic disease control officer, South Pacific area, for period July 1943-January 1944, and malaria and epidemic disease control officer, South Pacific area, for period January 1944-June 1944.
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dense anopheline population over 500 malarious natives were also brought to provide manual labor. These natives, in close contact with the troops, constituted, as was later shown, a malaria reservoir infective to an extraordinarily high degree. Bed nets were at first not available and few other individual protective measures, which we now know to be so important, were placed in effect. Drugs for suppressive treatment had not been brought along.

While the resultant severe epidemic was in full force, new units arrived, and active methods to stop the epidemic were attempted. Again, unfortunately, the methods employed were not those which would be promising. The principle of control adopted was drainage or treatment of any observable water surface. There was no entomologist in the group to point out the essential fact that control could follow only when the anopheline's habitat was known. Thus a campaign of quartering, raking and burning of coconut half shells, a task of gigantic proportions, was undertaken, though later it was shown that the anopheline malaria vector rarely, if ever, bred in coconut half shells. Drainage of a small swamp was attempted, though again a survey at a later date showed that anophelines were not breeding in this swamp. Nearby, a small innocuous looking stream had been overlooked. Subsequent entomologic observations showed this small stream to be the anopheline reservoir for the entire valley.

In retrospect and in the light of our present knowledge, these mistakes may seem extraordinary. The fact remains, however, that this small heroic group, unaided and faced with every conceivable obstacle, was the first of American forces to face the malaria problem in the Pacific. Prior to arrival they had not even the advantage of knowing that they were going to a malarious island. Any criticism one might want to make of these pioneer experiences could be made only by those ignorant of all the facts. Their early mistakes were soon recognized, and the lessons learned provided basic knowledge by which a brilliant achievement in malaria control followed. Details of the corrective measures which were applied have been described by Butler.[1]

In contrast to the near disastrous situation on the first malarious occupied island was that which occurred at the next base occupied by military forces. The commanding officer of this base had from the first the advice of a group of trained personnel regarding the pattern of the disease methods of prevention. Equally important, this command consistently followed the recommendations which were made. One of the most spectacular achievements of the malaria control group was convincing the high command that use of imported native laborers (the major cause of the epidemic on the first occupied island) would cause a far greater loss of man hours in troops due to malaria than could be gained by the presence of natives. As a result, on this base malaria never became a major military threat. The low rates achieved, in contrast to the earlier experience, should go down in the history of preventive medicine as a classic example of what may be accomplished in disease prevention. That the extremely low prevalence of malaria did not follow because of the island's being naturally less malarious has been repeatedly demonstrated. Troops maneuvering just outside the controlled, occupied area of this island have consistently encountered malaria in serious proportions.

1. Butler, F. A.: Malaria Control Program on a South Pacific Base, U. S. Nav. M. Bull. **41**: 1603-1612 (Nov.) 1943.

The value of citing these experiences is obvious. They demonstrate that malaria in this part of the world, in the absence of proper preparation and knowledge of control, may neutralize a military force with much more rapidity than the Japs themselves ordinarily could hope to accomplish. Similarly, they demonstrate the converse: that malaria can be effectively controlled even in hyperendemic areas under conditions of warfare if properly approached. They bring to light the essential fact that to attain the control of malaria it is essential that the problem be given the full time attention of well qualified specialists. They demonstrate with great clarity the additional necessity of training and education of both medical and line officers to recognize this need of control. Of equal importance is the need of a keen understanding by doctor, line officer and enlisted man concerning the role of each in measures of prevention to be taken by the individual. These measures concern the regular use of bed nets, the wearing of proper protective clothing and all the other preventive methods effective only when it is the will of an individual to utilize such protection. This is a matter of "malaria discipline," in which it is the duty of medical officers to point out all available protective measures and the responsibility of unit commanders to see that the recommended precautions are universally applied.

Subsequent experiences with malaria were largely under conditions of very active combat. The next landing took place in the face of very active enemy opposition. Fortunately it was the time of the dry season, and the first cases of malaria did not appear in numbers until approximately five weeks later. This landing under combat was followed by a repetition of many of the same mistakes that were made in the first landings on malarious islands under noncombatant conditions. The outbreak threatened to become the critical factor in the success of the operation, and the military situation was probably saved by the use of atabrine.

This drug received its first and most extensive early trial in the South Pacific. Its toxicity at the time was unknown, nor could it be predicted to what extent it would fulfil its function of suppressing clinical malaria. Important lessons were soon learned. First, the drug was apparently safe to use. Secondly, while it would prevent clinical malaria when used in proper dosage, eventually there came a time when the drug had to be or was stopped in many troops. At this time the price of employing a suppressive drug instead of true preventives became evident. Benign tertian or vivax infections became clinically active following the termination of suppression which was ordered when combat activities were no longer essential. Another serious drawback in the use of the drug was that, in suppressing clinical malaria, it tended to give military commanders a sense of false security. This in turn in some cases led to neglect or delay in developing true preventive measures such as anopheles mosquito elimination, screening and individual protective measures against mosquito bites. However, the enormous benefits of the drug outweighed such considerations, and a policy of continuing all heavily infected troops on atabrine suppression while overseas has been adopted.

It is not possible to present at length the various methods which were necessary and which were introduced to meet the problems faced in the control of malaria under combat. Control and elimination of anopheles breeding areas has been developed to an amazing extent and efficient insecticides, repellents and other devices for individual and group protection have

come into general use. It can be said, however, that it has become well established that control under active combat can be effected to a surprising degree.

### DENGUE

Long before the military occupation of the South Pacific there were within this area smoldering and sometimes very active centers of dengue, confined however to a few centers of civilian population. These foci were located at Suva (Fiji Islands), Noumea (New Caledonia) and Tulagi. In the few other more urban settlements encompassed by the South Pacific command, the disease had never established itself.

With the military occupation of South Pacific islands, an interesting sequence of events followed. Camps became well established and, in time, favorable mosquito breeding conditions such as would be afforded by discarded tin cans, upright oil barrels and trash and junk piles came into evidence. Aedes aegypti, a dengue vector, already present, though at first in low density, soon began to flourish and gradually the epidemic threshold for dengue was reached. It then became only a matter of time for the virus to be introduced and an epidemic to occur. At Tulagi, an old endemic center, almost all troops were affected soon after the cessation of the ground action at that base early in August 1942. From here the disease spread, not by the introduction of infected Aedes aegypti but by the movement of patients in the early stages of the disease.

Peculiarly enough, in spite of the frequent evacuation of patients to Guadalcanal, only 20 miles distant, the disease failed to occur in epidemic proportions. The explanation is simply that breeding conditions for Aedes aegypti never progressed to a density which would lead to an outbreak. In contrast, cases of dengue were further evacuated southward to Espiritu Santos, where, as Carson [2] and Johnson [3] point out, the disease caused from 12 to 40 per cent illnesses in individual commands in a three month period. Previously over a period of months the vector had established itself in sufficient density for the occurrence of this widespread epidemic.

The next island in the chain, Efate, although longest established, suffered no such explosive outbreak. Many months later, however, a localized, minor epidemic occurred among certain troop units which had not noted a gradual increase in aegypti breeding.

The disease reached fairly serious proportions in Noumea in New Caledonia and to a lesser degree occurred in Suva, Fiji. Both were urban communities in which the disease was previously endemic and in which it was necessary only for the mosquito density to be sufficiently built up. The spread of the disease then turned eastward, reaching in time Wallis Island, Funafuti and finally Honolulu. It seems probable that this spread followed the evacuation of patients by air. Peculiarly, the Samoan Islands, previously affected by dengue epidemics, were spared.

A matter of unusual interest which has been brought forth by Daggy [4] is that the epidemic on one of the islands was possibly not charged to Aedes aegypti but to a near related mosquito, Aedes scutellaris hebrideus. That may mean that to Aedes aegypti and Aedes albopictus, previously the only two generally accepted vectors of dengue, we may need to add a new transmitting species. Fortunately, A. Scutellaris hebrideus has breeding habits similar to those of Aedes aegypti, so that control measures directed at one will be largely effective against the other.

There are conclusions of considerable significance which may be drawn from the dengue experience in the South Pacific. Any one who has dealt with this disease knows that the control of its mosquito vector in military camps under noncombatant conditions is a relatively simple matter. With careful camp sanitation aegypti breeding will be largely prevented, even though mosquito control may not have been its planned objective. The occurrence of an epidemic of dengue thus becomes inexcusable in many instances. However, practical experience shows the importance of having an entomologist keep a constant check of the breeding of disease-bearing insects. To illustrate, as pointed out by Johnson,[3] authorities on one of the islands most seriously affected by an epidemic of dengue were forewarned by entomologists, by several weeks, of the existence of aegypti breeding to an extent which would result in an epidemic should the virus be introduced. Nothing was done, and a costly epidemic followed.

Dengue is predictable and often easily prevented. Its threat during wartime makes it almost impossible for medical and line officers to justify the continued existence of faulty sanitary conditions.

### THE DYSENTERIES

Dysentery, in contrast to dengue, plagued troops initially on every new landing whether under combat or not, and, unlike malaria and dengue, in which so much progress has been made to reduce their hazards, little advance seems to have been accomplished in the prevention of dysentery.

The exact cause of the epidemics cannot be stated, though careful control of the water supplies would seem to eliminate this source as one of general significance. There was, however, a close correlation in almost every instance with fly density. Furthermore, when flies disappeared the epidemics of diarrhea and dysentery abated. When the dead were buried, latrines established, garbage properly disposed of and screens installed, dysentery stopped. Unfortunately, before these measures could be instituted the epidemic had usually done its damage.

These intestinal disorders varied from mild diarrhea to frank "blood and pus" dysentery, the latter occurring only rarely. Though the milder forms prevailed, they were still greatly disabling. Almost 100 per cent of personnel in many initial landing operations became involved, usually all at about the same time. The fact that most patients remained ambulatory, depositing infectious material almost indiscriminately, greatly facilitated the opportunity for spread. Surprisingly enough, severe dysentery with fatal results was not encountered in the early phases of the South Pacific campaign. Both clinically and bacteriologically, true Shiga dysentery apparently was absent, according to Gudex, Fry and Taylor [5] and Allen.[6]

The role of amebic dysentery is problematic. Sporadic cases were not rare, but certainly the disease never appeared in epidemic form. How many low grade chronic amebic infections will present themselves

2. Carson, D. A.: Observations on Dengue, U. S. Nav. M. Bull. **42**: 1081-1084 (May) 1944.
3. Johnson, L. W.: Sanitary Problems of a Tropical Advanced Base, Mil. Surgeon **94**: 325-336 (June) 1944.
4. Daggy, R. H.: Aedes Scutellaris Hebrideus Edwards, a Probable Vector of Dengue in the New Hebrides, War. Med. **5**: 292-293 (May) 1944.
5. Gudex, T. V.; Fry, F. O., and Taylor, W. H.: Enteric Diseases Encountered at U. S. Naval Base Hospital, U. S. Nav. M. Bull. **41**: 1613-1619 (Nov.) 1943.
6. Allen, H. C.: A Year's Laboratory Experience at U. S. Naval Base Hospital, U. S. Nav. M. Bull. **41**: 1638-1645 (Nov.) 1943.

in the future is a matter for speculation. Better methods to prevent these epidemics of diarrhea and dysentery would seem to await the establishment of more facts concerning the mechanism of their occurrence and the finding of new methods for their control.

### FILARIASIS

Of all diseases which were encountered in the South Pacific, the appearance of filariasis in epidemic form excited by far the most interest. It was the first epidemic of the disease in the history of American or other military forces. Such an event occurring, particularly on so large a scale, was totally unexpected. From previous experience there appeared substantial reasons for believing that filariasis would occur in troops rarely, if at all. In a period of forty years, in which a naval station had been in existence at American Samoa, not a single case of filariasis had been reported in naval personnel. Soon after a wartime increase of military forces in Samoa, however, a considerable number of men stationed there began to manifest transient swelling of the extremities, a so-called "retrograde" lymphangitis. There were also signs of the involvement of the lymphatics of the spermatic cord and scrotum. Though attendant pain and disability were not great, many were fearful that the dreaded end result, elephantiasis, might ensue.

At first the medical officers, in view of the apparent immunity of white persons to the disease, as suggested by past Samoan experience, were not convinced of the diagnosis. Furthermore, blood examinations failed to reveal microfilariae. It was not until adult filaria worms were demonstrated in involved tissues of patients showing characteristic symptoms, first accomplished by Dickson,[7] that the diagnosis was established beyond a reasonable doubt.

A survey by the senior author revealed that the disease was occurring in troops on Tutuila, Upolu, Wallis, Funafuti, Borabora and, on occasion, in troops in the Tonga Islands. On one of these islands Wartman and King [8] report an incidence of 20 per cent of the total strength hospitalized with manifestations of filariasis. The author's survey on various other islands showed that 5 to 70 per cent of certain groups had contracted the disease over a prolonged period. Facts from at present unpublished sources indicate that the overall incidence may reach higher than 30 per cent among exposed troops.

The incubation periods varied widely, although cases appeared as early as a month after residence on the islands where filariasis was endemic. Evidence of the disease in the majority appeared only after many months' exposure.

In a series of brilliant epidemiologic studies conducted by Bromberg, Byrd and St. Amant [9] it was found that of the several possible mosquito vectors Anopheles scutellaris var. pseudoscutellaris, a day biter, was the principal if not the sole vector of importance. Dissections of mosquitoes of this species caught in native villages showed a high percentage harboring infective forms capable of transmitting the disease. On the other hand, mosquitoes caught a few hundred feet distant from the native villages showed no infective forms. From such evidence it was demonstrated that infected mosquitoes of the incriminated species would be found only short distances from the source of infection. This source was the native population, who showed a high incidence of filariasis in the form communicable to the mosquito; that is, with microfilariae present in the blood. It therefore became apparent that, for transmission, military personnel and natives must live in propinquity. There was an almost unvarying correlation between the degree of infections in troops and the number and nearness of natives to troop bivouac areas. In those instances in which troops had been fortunate enough to establish camps away from natives, filariasis had occurred only rarely. It was evident from the foregoing observations that for control of filariasis the two important factors were mosquito control and all possible separation of natives from military personnel.

In the early days of the war, troops were sent to these islands in such numbers that it was often impossible to quarter them at safe distances from the natives. A large number, in fact, were quartered in the midst of native villages. Frequently the haste with which these occupational operations had to be carried out made it impossible to accomplish adequate mosquito control measures.

Epidemiologically it is of interest that, although the disease exists in natives throughout both the South and Central Pacific areas, it is only in the South Central Pacific islands that transmission has been demonstrated to occur in epidemic proportions in military personnel.

Byrd and St. Amant,[10] who have continued their studies in areas west of the Central Pacific (New Hebrides), incriminate Anopheles punctulatus moluccensis as a likely vector of filariasis in natives. They state that effective control against this species, for malaria prevention, and the relative isolation of the natives, can explain the absence of the disease in the more western portions of the South Pacific. Such an explanation, however, seems inadequate, for in the early days both moluccensis and natives were often in close relation to troops, a fact proved by the tremendous amount of malaria which resulted. Even if moluccensis were a much less efficient transmitter of filariasis than of malaria, considering the large numbers of troops involved, an appreciable number of cases of filariasis would seem to have followed from the period before control had been effected. The fact that the microfilaria of W. bancrofti in the Central Pacific is nonperiodic, while in the western South Pacific it is of a periodic variety, may eventually prove of importance in clarifying the failure of transmissions in areas other than Samoa and vicinity.

### INFECTIOUS HEPATITIS AND SCRUB TYPHUS

Two more diseases which occurred in the South Pacific deserve at least brief mention. Infectious hepatitis occurred both sporadically and in epidemic proportions. Willard [11] reports 750 admissions to a base hospital in the New Hebrides-Solomons area during a six months period, the peak of cases occurring in the last month, which was May of 1943. Simpson, Powers and Lehman [12] at another base hospital in the same area report 320 infective jaundice admissions. They state that the disease reached epidemic proportions

7. Dickson, J. G.; Huntington, R. W., Jr., and Eichold, S.: Filariasis in Defense Force, Samoan Group, U. S. Nav. M. Bull. **41**: 1240-1251 (Sept.) 1943.
8. Wartman, W. B., and King, B. G.: Early Filariasis in American Soldiers, Bull. U. S. Army M. Dept., May 1944, no. 76, pp. 45-51.
9. Bromberg, L.; Byrd, E. E., and St. Amant, L. S.: Studies on Filariasis in the Samoan Area, U. S. Nav. M. Bull., January 1945, to be published.
10. Byrd, E. E., and St. Amant, L. S.: Studies on Filariasis in the New Hebrides, to be published.
11. Willard, J. H.: Acute Infectious Jaundice, U. S. Nav. M. Bull. **42**: 1085-1088 (May) 1944.
12. Simpson, W. M.; Powers, W. L., and Lehman, R. G.: Acute Infective Jaundice at U. S. Naval Base Hospital, U. S. Nav. M. Bull. **41**: 1620-1623 (Nov.) 1943.

among troops in the South Pacific area in December 1942 and during the first six months of 1943.

Many of the cases came from Guadalcanal at a period when combat fatigue and exhaustion were more pronounced than at any other time during hostilities. They tended to come down at the same time and to come from the same units. There seemed to be no correlation with a history of yellow fever vaccination. The disease finally died out and, while a few sporadic cases appeared subsequently, the numbers never reached the proportions of the original epidemic.

The second disease worthy of mention, scrub typhus, or tsutsugamushi disease, appeared in only small numbers of South Pacific troops. The few cases came from the islands of New Georgia and Bougainville. On the latter island the disease was largely confined to men who had made patrols through recently occupied Jap bivouac areas. Scrub typhus in the early phases was thus numerically of little importance.

## COMMUNITY HEALTH EDUCATION BY THE MEDICAL PROFESSION

### FROM MEDICINE SHOW TO HEALTH MUSEUM

BRUNO GEBHARD, M.D.
Director, Cleveland Health Museum
CLEVELAND

"Physicians as good citizens and because their professional training especially qualifies them to render this service should give advice concerning the public health of the community." So states chapter IV of the Principles of Medical Ethics of the American Medical Association. How can the physicians do their share in giving such advice? In the line of personal health the good physician has done it, all the time being aware that the original meaning of the word doctor is "teacher." In our days preventive medicine is gaining more and more ground. There will still be enough to do in the line of curative medicine—as the poor, the sick ones will always be with us. But preventive medicine has demonstrated that less sickness is possible, that diseases can be prevented, that life can be prolonged, that health for the millions can be improved. Interest in public health has enormously increased among the general public. Discussions on the administration of medical care and medical insurance are the topics of the day. We cannot complain that the present generation is not interested in the affairs of personal and public health. The increasing number of books, magazines articles and films, even before the war, demonstrated this interest and, as usual, the war has increased it. Health education in schools and for adults has become an accepted responsibility of official and voluntary health agencies, but especially of the medical profession. Those who are still doubting Thomases might be referred to Dr. W. W. Bauer's article on health education in "Administrative Medicine." [1] Here he answers the question "Is health education necessary?" discusses the old misunderstanding that health education encourages self diagnosis and self treatment and countercharges the opinion that health education stimulates hypochondriac tendencies and tends to create abnormal fears. Where health education is done wrongly or insufficiently it usually has its reason in only sporadic or badly organized efforts of our own groups. As Charles H. Mayo said, "I believe the doctors are always at fault when the public does not understand them." The American Medical Association has a great share in lay health education. In 1911 it established the Council on Health and Public Instruction, issued a handbook for health speakers in 1919 and has published *Hygeia* since 1923.

In awareness of the platform of the American Medical Association advocating "the principle that the care of the public health and the provision of the medical service to the sick is primarily a local responsibility," the Cleveland Academy of Medicine started out in 1936 with a new approach to community health education. In close cooperation with the Cleveland Health Council twenty-two civic bodies, including museums, colleges, schools and the newspapers, were invited to study the advisability "of establishing a permanent museum of health and hygiene where scientifically prepared material of a visual nature might be made available to the public at all times."

On Dec. 28, 1936 the Cleveland Museum of Health and Hygiene was incorporated, not for profit, under the laws of the state of Ohio. Out of practical reasons we are referring to it now as the "Cleveland Health Museum." The Cleveland Dental Society and the Academy of Medicine organized a membership drive under their own members. After securing about 600 prospective members who were willing to pay annual membership dues of at least $10 but not until "the museum's trustees had declared that sufficient funds had been pledged or paid to guarantee successful operation," lay individuals of the community were approached for financial support. A suitable site was donated by Mrs. E. S. Prentiss, who also made funds available to transform the old mansion at 8811 Euclid Avenue into a modern museum.

Health museums are distinctly different from medical museums. The emphasis in medical museums is on professional training; health museums are for lay education. Medical museums feature dis-ease; health museums aim at better health for more people understanding health at being physically and mentally "at-ease."

There are disadvantages in using the word "museum," which for so many people sounds so like "mausoleum." On the other hand, museums are recognized as places where one can get unbiased information, where nobody tries to sell anything other than the truth and as places where there is something to look at. Museums, like all health exhibits, have special advantages. The late Evart G. Routzahn in "The A B C of Exhibit Planning," 1918, thus summarized these advantages: "Exhibits attract attention of people who would not go to a lecture or read a pamphlet or listen to a health broadcast. . . . Exhibits are quick methods of presenting a new subject or an old subject in a new form. . . . Exhibits appeal to all sorts of men, to those who read editorials as well as to those who get no further than the baseball news."

The power of visual impression has been stated best by Tennyson in Enoch Arden: "Things seen are mightier than things heard."

A museum makes people come, stop, look, listen and, last but not least, it makes them better remember what they have learned when the occasion comes for practical application.

Read before the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 14, 1944.

1. Emerson, Haven, editor: Administrative Medicine, New York, Thomas Nelson & Sons, 1941.

There is also no doubt that the pure existence of such an institution is a continuous admonition of the importance of health. There will always be many people who will never come inside a museum, but those we try to reach through our neighborhood and traveling exhibits, in lobbies of banks and colleges, in settlement houses and fairs, in war plants and in department stores. The organization of a museum has also the advantage of making new financial sources available for health education. As all members of the community are benefiting by improving the health status, many are willing to participate in the financing of such a museum. In the four years of our operations about $110,000 has been made available through the generosity of approximately 900 interested persons. The museum has just received its first endowment in the amount of approximately $400,000.

Being a museum does not mean that we restrict ourselves to the visual means as exhibits and films; all other mediums and methods of health education are used, and always organized medicine takes the responsibility for accuracy of presentation. For more than two years a weekly fifteen minute radio program has been conducted, mostly in interview form. A Sunday health column in a newspaper used material prepared by local medical and dental members until the paper shortage forced us to stop. Every year during the hay fever season a pollen count is published in all papers and mentioned on the news broadcasts of all radio stations. We are doing this not only for the benefit of the sneezers but to make the community conscious about air pollution in general.

A health museum is an ideal place to bring different groups in contact with health problems. It is obvious why Red Cross classes in first aid, nutrition and home nursing use the museum. Last year we had 520 groups, most of them adults, averaging 20 persons, and close to 300 were Red Cross groups. Other groups varied from provisional members of the Junior League to students of theology from a nearby college; from chiropodists to students of a school of embalming; from the Slovak Literary Society to the School for the Deaf. All medical, dental and nursing students from Western Reserve University have a visit to the museum included in their field trips. The medical students hear, in addition, a lecture on "The Physician as Health Educator," and they have to write a critical report which is graded. Doctors and dentists send, from time to time, specially printed invitation cards included with their monthly statements to their patients asking them to visit the museum. (By the way, our telephone number is easy to remember for our professional friends—Randolph 0606.)

We enjoy close cooperation with the health education activities of the American Medical Association. Many of their loan exhibits are on display, and nearly 2,000 written inquiries from our question box have been answered through the courtesy of the Health Education Bureau of the A. M. A. This activity should not be underestimated: it is a highly individualized form of health education, as great care is taken in answering these letters. Olesen [2] states the problem that "for some mysterious reason patients either ignore or hesitate to ask questions of their attending physician. In their turn medical attendants somewhat similarly fail to meet the quite reasonable question of their patients with frank, truthful and effective replies." Our experience has shown again and again that people feel their question is not important enough to bother a physician or they do not want to reveal their ignorance to him. Sometimes, but rarely, they try to check up on the advice of their own physician.

An important activity is the classes for expectant mothers and the so-called prospective fathers, held twice weekly at the museum under the auspices of the Cleveland Child Health Association. Admission to these classes is possible only by reference from a practicing physician.

Our emphasis on lay education does not allow us to overlook the necessity for professional training. The museum offers a one to three months internship in health education. Thirty-two persons, including one from Mexico, one from Chile and one from China, took advantage of this opportunity. In 1943 we conducted a four week summer course for the graduate students of public health of the University of North Carolina. We are also anxious to train museum technicians, making our workshops available for the rehabilitation of returned handicapped soldiers.

One of the main considerations in establishing a health museum was the creation of visual teaching aids. Before the war such material was mostly imported, strangely enough, from Germany and Japan. There is no reason why this country cannot provide its own material if provisions are made for securing the necessary staff of technicians and proper methods of distribution of visual teaching material. We started in 1940 our own workshops with one artist, one technician and three WPA artists. Today our workshop activities have grown so that our duplicate traveling exhibit "Food for Health" has been shown in about thirty-six communities in fourteen different states. A Spanish edition was constructed for the Mexican government, and the Army Air Force used the exhibits in its educational program at Wright Field, Dayton, Ohio.

Regarding our own exhibits, we have divided them between two floors; the first floor deals with exhibits strictly on human biology under the titles "Man—Wonder of Life," "Man's Hand," "Man's Heart" and "Man's Head." Great care has been taken to display everything in a pleasant manner. Our second floor deals with maternal, child and dental health and with nutrition. One room is set aside for the "special exhibit of the month." No museum would be big enough to cover all the important items of personal and public health at the same time. We have therefore a new exhibit every month going with the calendar, as Health in the Summer, or with the many campaigns. During the Christmas Seal sale we have an exhibit on tuberculosis; during the March of Dimes, on infantile paralysis; in April, on cancer, for example.

We take great care in presenting the findings of medical science but avoid anything that, to a critical lay visitor, would make the museum appear as an advertising agency for the medical profession. Frankly, we have so much respect for the intelligence of our visitors—and perhaps for the effectiveness of our exhibits—that we hope the desired result of better appreciating the work of the physician will be achieved in a more indirect way.

Regarding exhibits technic, we are proud that no signs can be found which read "Please do not touch." On the contrary, we prefer three dimensional, animated exhibits with visitor's participation, popularly referred to as "push-button exhibits." The original cost of our exhibits, not including the Transparent Man, which is a loan from the American Museum of Health, is not

2. Pub. Health Rep., May 8, 1942.

more than the production cost of a good sound motion picture of twenty minutes showing time.

Four years is too short a time to evaluate our activities. We can say only that in spite of transportation difficulties we have a still increasing attendance. Last year we had about 30,000 at the museum, and approximately 750,000 saw our traveling exhibits. Requests for loan material reach us on such a scale that it will soon become impossible to grant such requests if we do not receive help from national agencies.

Practicing physicians work under great strain these days, but one should not overlook the fact that in wartime social changes on the home front occur quicker and oftener. Increased activities in health education help to win the war too. State and county medical societies might reevaluate their health education activities and study the possibilities of establishing a health museum of their own. It is a long way from the commercialized "medicine show" to the educational health museum. That it can be done and that it works has been demonstrated in Cleveland.

8811 Euclid Avenue.

## ABSTRACT OF DISCUSSION

Dr. W. W. Bauer, Chicago: Most people are visually minded, and therefore a picture is worth a great many words. I think the salient points about the Cleveland Health Museum are several: It is fortunate to have had a generous patroness who gave, first, the museum property, then the means for converting it into a museum and then a liberal endowment, and who also went one step further and created an incentive for good work in health education everywhere by establishing an award which is to be made annually by a committee. It is called the Prentiss Award, and it is to be awarded to health educators who have created outstanding records in health education. I think we should all be proud, as physicians, that the medical profession, through the Cleveland Academy of Medicine, has taken this leadership in health education in Cleveland. Those of us in other communities may well go back inspired to have the medical profession in those communities do likewise, because I think we are faced with the fact that, unless the medical profession seizes and exercises the leadership that rightfully belongs to it, that leadership will pass into other and less capable hands. The Cleveland Health Museum has the advantage of being a museum, not a mausoleum where dead ideas are embalmed. The Museum is distinctly alive. There are many occasions when you can go to Cleveland and meet the Cleveland Health Museum on the street, without going to 8811 Euclid Avenue, as a result of outdoor exhibits. The large number of groups that have come to visit the Museum, the diversification from exhibits and slides and films into the fields of radio and newspaper publicity, and the gearing of the Museum to the needs of the community, are all significant reasons why in four short years Cleveland Health Museum has become an institution that I am firmly convinced that community would be most unwilling to do without. Not content with being a Cleveland institution, it has become of nationwide significance because its exhibits have been used elsewhere, and because it has furnished a workshop, a laboratory, for the development of technics in visual education. Every community of any size at all should look forward to having a health museum of some kind. This is not the first effort in the United States to establish health museums. There was one established twenty years ago or more by a young woman whose name unfortunately escapes me, but it was in one of New York's slum areas, where she had taken a typical tenement and left half of it in exactly the condition in which she found it, deplorable in every respect, but she had taken the other half of it and converted it at small expense in money, but with considerable ingenuity, into what such a tenement might have been. That was an early effort at museum technics in this country.

Dr. Charles V. Craster, Newark, N. J.: I should like to ask Dr. Gebhard what the annual attendance is and what procedure they take to get people in to see the exhibits. It seems to be a fine idea and one particularly good for a city with a large industrial population.

Mr. Homer Calver, New York: I should like to emphasize the great difference between a health museum and a medical museum. A medical museum, in which the exhibits are designed for the understanding and education of the medical student or the practitioner, must present its material in scientific terms and in such detail that it is not only boring, but unintelligible to the layman. In a health museum no attempt is made to make the message encyclopedic. There is a conscious effort to reduce the text to a minimum and to avoid everything but the simplest terms. I have studied health exhibits in several countries for a number of years, but I have found no successful combination of those two objectives. If you attempt to create a popular museum and a medical museum at the same time, the result is bound to be something which is over the heads of laymen and beneath the interest of the scientist. The other point I should like to comment on is the growing development of medical and public health exhibits in science museums. A public health section in a museum of science or in a museum of natural history is not a substitute for a health museum. Dr. Gebhard pointed out that they had attendance at his museum of about 30,000 people a year. But this figure fails to represent the full measure of the program. Even the 75,000 additional contacts outside the museum through the traveling exhibits doesn't completely represent the scope of a museum such as they have in Cleveland. That institution, which is tied in with the Cleveland Health Council, is a vital, active, community center for health education—a constant, throbbing center, which day in and day out carries its message of hygiene and public health to the people. That type of community program is difficult to secure where you have only a health exhibit in another museum. So I would say to any of you who may see a spark of interest in your community for development of a museum of health that every effort should be made with the cooperation of the county medical society, the health department and the voluntary health agencies to secure a separate and distinct museum of health (even though it may be small) which is a vital center for community health education.

Dr. Bruno Gebhard, Cleveland: I am afraid that a museum of our type, and sometimes we feel we haven't even arrived at the status of a museum—that an activity of our type cannot be measured by the attendance at the central office. As of today we have loan exhibits at the Ohio State Museum, in Omaha, the Gas and Electric Company, in Oregon and in Buffalo. I don't know how many people go to see the exhibits there. In our own city it works this way: We are a member of the Health Council and we work more or less as a specialist branch in health education for all the other voluntary health agencies. For instance, the Anti-Tuberculosis League has a mass chest x-ray examination in war plants and two weeks later we move in with our exhibits on personal health and nutrition. Sometimes it is an exhibit on dental health. It is hard for us to measure our activity, and Mr. Calver is quite right: 30,000 people, our annual average might be low. Maybe we should have said 90,000, or 300,000 in a year. We don't know how good or how bad we are. Regarding the question how we get people to come to a health museum: I think we don't realize that the need for understandable information on the part of the general public is enormous. Out of our own self protection and not to kid ourselves, we have done nothing in organizing our attempts. We have never organized visits by school classes. They come on the initiative of the individual class room teacher. We have never invited any adult groups to see us. It depends more or less, as most of those things depend, on word of mouth propaganda. We have done the usual things, street car signs and a weekly calendar in the Sunday newspapers telling what is going on. We realize that public relations are nothing else than really good personal service, and if you give that to your community you will have good attendance at your museum.

# THE PROBLEMS OF CANCER BIOLOGY

R. R. SPENCER, M.D.
Chief, National Cancer Institute, National Institute of Health, United States Public Health Service
BETHESDA, MD.

No human malady today is of greater interest to the biologist or of more concern to the public than is cancer. The appeal to lay and professional minds alike is due not only to the manifold problems involved in the prevention, control and therapy of cancer but also to the much publicized behavior of cancer cells as a ruthless group of gangsters running amuck among the orderly functioning tissues of the human economy. In the light of our present knowledge of the cancer process, this analogy is useful and not altogether inaccurate since the human gangster and the cell gangster do have something in common. Both arise as a rule under unfavorable environments.

Unquestionably, cancer has biologic attributes that set it apart from all other forms of maladjustment. It is my purpose first to set forth some of these attributes, which, I believe, give cancer research an advantageous position in experimental biology and medicine, then to outline briefly what is now being done and finally to suggest the probable plans of attack on this admittedly major health problem.

## MULTIPLICITY, SPECIFICITY AND NONSPECIFICITY OF INCITING AGENTS

No other form of human maladjustment on the physical level has such a large number and variety of inciting agents. Excluding from consideration the well established part played by x-rays, gamma rays and ultraviolet rays in the genesis of cancer, Hartwell of the National Cancer Institute has published a survey of the literature on those substances that had been tested for carcinogenic activity.[1] Data were collected on 696 different chemicals, organic and inorganic, 169 of which were reported to be carcinogenic. By including the literature since the publication of his bulletin three years ago, Hartwell has now found a total of 1,028 compounds which have been tested for carcinogenic potency and of which 284 were reported to be active.

Indeed, every cancer investigator has been impressed with the fact that active carcinogenic compounds are found in a variety of chemical classes, that substances of widely different chemical structure possess carcinogenic activity and that among substances of the closest chemical similarity one may be active and another completely inactive. To date, no invariable correlation has been discovered between molecular structure and carcinogenic activity. The carcinogenicity of a substance is known to be influenced by many factors, including the species and the genetic constitution of the experimental animals employed, the age, the sex, the diet, the physical condition of the animal, the purity of the chemical compound, the dose, the physical state of the compound, the nature of the solvent or vehicle used in administration, and the route or site of application. The value of any experimental result is dependent on the number and kind of animals used, the survival rate and the duration of the experiment. These observations seem to suggest that, although the mechanism involved in the genesis of cancer may have a basic pattern common to all cancers, the conditions are seldom exactly the same in the development of any two.

It should also be remembered that cancer in human beings is an environmental and occupational disease to a considerable extent. Modern industry has created for man a new and artificial environment, which has brought with it a large number of industrial and environmental hazards affecting nearly every organ of the human body. Industrial medicine, aviation medicine and radiology are products of the modern era. Hueper,[2] who has reviewed the literature of industrial cancer, states that:

> Occupational cancers are elicited by a great variety of chemical and physical agents, such as arsenic, chromates, nickel carbonyl, radium, mesothorium, asbestos, crude mineral oil, pitch, tar, soot, paraffin oil, anthracene oil, creosote, aromatic amino compounds such as aniline, naphthylamine and benzidine, benzol, ultraviolet rays, roentgen rays and rays of radioactive substances and certain parasitic worms. . . . Habits too are responsible for cancer of the mouth, lips and cheeks in tobacco smokers and betel nut chewers, for cancer of the skin of the abdominal region in carriers of certain heating appliances in Kashmir or in Japan.

The carcinogenicity of some of these substances may be questioned.

However, cancer research has by no means fully explored the great variety of environmental and occupational health hazards to which the increasing complexity of modern life exposes us. Very likely more of these will be found as factors in the genesis of cancer. The continued increase in cancer prevalence during the past three or four decades cannot be accounted for solely on the basis of better recognition of the disease, on improved diagnostic methods or on the fact that there are more people living now to the cancer age. Cancer following x-ray burns, for instance, could not have existed prior to the discovery and use of these rays. The same may be said about cases of occupational osteosarcomas in watch dial painters, caused by the ingestion of infinitesimal amounts of radium. Still another relatively new type of industrial cancer is that occurring in dye workers due to a specific compound (betanapthylamine) and affecting a specific tissue only, the epithelium of the urinary bladder. Cancer of the lung also has been shown to be increasing over a number of years. Is this due to city soot or to exhaust gases from automobiles, or both, or to some other agent? Seelig and Benignus [3] of the Barnard Free Skin and Cancer Hospital experimented with soot from the chimney of a furnace burning bituminous coal. The soot was used as bedding for mice of the Buffalo strain. Primary tumors of the lung were obtained in 8 of the 100 test mice as compared with 1 of the 50 control mice. (This work confirmed some earlier experiments of Passey.[4])

Shimkin and Leiter [5] of the National Cancer Institute extracted tar from chimney soot and injected it subcutaneously into mice. Sarcomas were obtained in about half the animals. Leiter, Shimkin and Shear [6] later tested tars extracted from atmospheric dust with benzene and with ethyl ether and produced sarcomas at the site of injection in 18 of 291 mice (C3H strain) in twelve months.

Barnard Hospital Lecture, Nov. 21, 1944.

1. Hartwell, J. L.: Fed. Security Agency, U. S. Pub. Health, 1941.
2. Hueper, W. C.: Bull. Am. Soc. Control Cancer **25**: 63-69 (June) 1943.
3. Seelig, M. G., and Benignus, E. L.: Am. J. Cancer **34**: 391-398, 1938.
4. Passey, R. D.: Brit. M. J. **2**: 1112, 1922.
5. Shimkin, M. B., and Leiter, J.: J. Nat. Cancer Inst. **1**: 241-254, 1940.
6. Leiter, J.; Shimkin, M. B., and Shear, M. J.: J. Nat. Cancer Inst. **3**: 155-165. 1942.

Nettleship and Henshaw,[7] also of the National Cancer Institute, showed that intraperitoneal injections of minimal anesthetizing doses of urethane (ethyl carbamate) repeated at weekly intervals increased the incidence of lung tumors in C3H mice from less than 5 to more than 75 per cent. Urethane is chemically related to the barbiturates, which are widely used as soporifics. Some of the latter are now being tested on mice for carcinogenic effect; but even if they are found active, one cannot assume without more direct evidence that these drugs are factors in the genesis of cancer of the human lung.

Nevertheless it may be safely stated that in no other form of human maladjustment can one demonstrate such a multiplicity of exogenous inciting agents. Some of these agents (chemical and physical) are capable of inducing the cancer process in widely different species and in different tissues of the same species. Roentgen rays, gamma rays of radium, methylcholanthrene and benzpyrene belong to this group and are considered as highly potent carcinogens. Others, such as estrone, beta-naphthylamine and *p*-dimethylaminoazobenzene, are more selective. They affect certain specific tissues primarily and only rarely cause cancer in other organs. Nothing has ever been found which has given even a hint as to how the carcinogenic process once started may be stopped or reversed. Complete destruction of all cancer cells is at present the only known method of effecting a permanent cure of cancer. Methods of prevention seem more hopeful. Whenever a new exogenous cancer inciting agent is discovered, the knowledge provides us at once with the means of developing practical protection against this particular agent. Therefore all cancers induced by exogenous agents belong definitely in the category of preventable diseases. In this connection Kennaway [8] has recently presented data which suggest to him that the very high incidence of primary cancer of the liver found among Negroes in Africa does not appear among Negroes in the United States and is therefore not of an entirely racial character. Hence he believes that the prevalence of this form of cancer in Africa may be due to some extrinsic factor which could be identified.

Unfortunately, the high death rate from cancer is not ascribable to cancers of exogenous origin but rather to those of endogenous origin. Clinical and experimental evidence suggests that the majority of such cancers are induced by unusual and, for the most part, long standing internal environmental and biochemical imbalances. According to the 1942 census reports, cancer of the digestive organs and peritoneum not including the oral cavity accounted for 45.7 per cent of all deaths from cancer. Cancer of the breast and of the female generative tract accounted for 43 per cent of all deaths from cancer among women. Certain of these internal cancers, now thought to be due largely to endogenous conditions, may be shown later to have extrinsic etiologic factors, such as Kennaway's suggestion for cancer of the liver among Negroes.

Of the endogenous cancers, none has received greater attention experimentally than has cancer of the breast. It is now well established that the genesis of cancer of the breast in mice involves interaction among at least three factors: (1) the genetic constitution, or the hereditary susceptibility, (2) the presence of the female hormone estrone and (3) the presence of the so-called mammary tumor inciter or "milk factor." This last mentioned factor is a labile, antigenic filtrable agent transmissible from mother to offspring through nursing. Of course, it cannot be stated that human breast cancer is dependent on a similar set of conditions. Yet on the basis of our knowledge of breast cancer in mice at least one investigator recently advocated "that the women of families with any malignant tumors in their ancestry refrain entirely from nursing their progeny." "Artificial feeding," he advises, "should be substituted from birth for at least one generation." [9] There is, however, considerable doubt on the part of many that such advice is warranted at this time. (The idea was first suggested by Bittner,[10] who discovered the milk factor in mice.)

It may now be safely stated that at least some cancers of endogenous origin are the resultant of a complicated set of internal factors, genetic, hormonal and biochemical. However, the factors responsible for cancer of the breast may not necessarily bear any relationship to the biochemical conditions responsible for cancer of the stomach, liver, lung, prostate or other tissues. By the same token it is apparent that a diagnostic test for cancer in one organ or tissue is not likely to be effective in detecting cancer in another organ or tissue. To be useful, a diagnostic test should detect the disease in its early stages in all locations.

### CANCER AS A SURVIVAL PROCESS

For the sake of clarity and for the convenience of the investigators, the causation of cancer was divided by Ewing into two parts: (1) the causal genesis of tumors, including the inciting agents leading up to the development of malignancy, and (2) the formal genesis, or the factors responsible for the nature of the cancer cell and its tendency to unlimited multiplication. I have indicated that in the causal genesis sufficient data have accumulated to make it clear that there are multiple and diverse causal conditions which probably vary for each type of cancer. This diversity of inciting causes is so apparent that some investigators consider the different types of cancer as representing different diseases.

On the other hand, the formal genesis is concerned with the nature of the cancer cell or the changes in the cell responsible for the malignant state, which changes are thought to be essentially the same regardless of the diversity of causes or the tissue of origin. The diverse inciting agents play no part in the continuation of malignancy, nor is there any relationship between the nature of the agents and the degree of malignancy, the invasiveness of the cancer cells or the final outcome. While cancer, from the standpoint of inciting agents, may justly be regarded as a whole group of diseases, it is equally reasonable to consider it a single disease from the standpoint of the intracellular change which results in the malignant state. Although the mechanism of this change is unknown, it seems reasonable to believe, from clinical observations as well as from experimental evidence derived from the study of the metabolism and enzyme pattern of cancer tissue, that the nature of the transformation from normal to cancer cells may be essentially the same in all tissues. These considerations suggest that cancer is the result of a special type of cellular adaptation which can be distinguished from other forms of maladjustment, especially from those diseases caused by specific parasites.

7. Nettleship, A., and Henshaw, P. S.: J. Nat. Cancer Inst. **4**: 309-319, 1943.
8. Kennaway, E. L.: Cancer Research **4**: 571-577 (Sept.) 1944.
9. Gross, L.: Cancer Research **4**: 293-303 (May) 1944.
10. Bittner, J. J.: Tr. and Studies, Coll. Physicians, Philadelphia **9**: 129-143, 1941.

Every one recognizes that all diseases may be considered as manifestations of cellular reactions to unusual external and internal environmental conditions. Therefore cancer necessarily falls into the same category; but there is a difference in the cancer process, which should be emphasized. In communicable diseases one observes a process of adaptation between two living variables, the mammalian cell host and the invasive parasitic agent (virus, bacteria, protozoa). In hormonal diseases (diabetes, hyperthyroidism, gigantism, Addison's disease and other diseases) and in the various avitaminoses (scurvy, pellagra, ricketts, beriberi and so on), as well as in those conditions caused by hereditary or genetic defects (hemophilia, xeroderma pigmentosa, Huntington's chorea and others) one observes conditions or processes resulting from the efforts of the organism to survive hormonal, nutritional and developmental imbalances.

In cancer too we are observing unquestionably a movement toward that universal goal of all living things, survival. In the communicable diseases the struggle for survival may end in the death of the host, the death of the parasite, the death of both or a compromise by which both host and parasite live together in symbiosis. The removal of the inciting cause in such diseases results in the restoration of normal cell states. In cancer, by contrast, the local surviving cells do not assume their normal function following continued injury but take on the properties of malignancy and become parasitic. The intracellular change culminating in cancer usually represents a process which requires a long period of time. The very shortest recorded period between the injection of a powerful carcinogenic agent in animals and the first appearance of malignant tumors was twenty-five days.[11] Furthermore, the pathologist can detect no discontinuity between the precancerous and the cancerous process. Even the parasitic diseases, when chronic, are thought by some to serve as carcinogenic agents. Interval exposures of experimental animals to very small doses of carcinogens have been shown to be more effective in the induction of cancers than have single large doses.[12] That the cancer cell is the result of a process of adaptation is also suggested by various observations indicating that cancer cells are tougher and have greater survival value than have the homologous normal cells.[13] In transplantation experiments, cancer implants are seen to elicit a greater vascular bed from the host than is found following implantation of normal tissue and to assume a rate of multiplication superior to surrounding normal tissue. It is a common clinical observation that cancer tissue in the terminal stages will continue to grow and increase in weight while the rest of the body rapidly loses weight.

This concept of cancer as a manifestation of a special type of cellular adjustment (or maladjustment, according to one's frame of reference[14]) is set forth here because it seems to be a safe and sound, although perhaps a somewhat obvious, biologic generalization, but it serves well as an advantageous point of view from which future attacks on the cancer problem may proceed.

As far back as 1929 Ewing[15] said:

> We have no satisfactory proof of the nature of malignant proliferation of tissue cells. Neither have we any definite knowledge of the nature of normal growth; we merely have descriptive knowledge of the conditions under which it occurs. We know that the ovum, when fertilized, grows under certain conditions, but we do not know why it grows. I think, therefore, that the problem of the ultimate nature of the cancer process is one of those types of information which will long escape the human mind. In the present state of science, I think it is unsolvable.

We need not be quite so pessimistic today, although we believe the majority of cancer investigators feel that the carcinogenic change is related to certain fundamental life processes, (1) growth, (2) organization, (3) differentiation, (4) mutation and (5) the aging process. It has been pointed out that the same physical agents (x-rays, ultraviolet light and gamma rays of radium) that are known to increase the occurrence of biologic mutations in suitable laboratory animals will also induce cancers in animals and human beings.

On the other hand, it is only fair to state that others, especially those who advocate the virus origin of cancer, see no need to postulate a permanent and fundamental cell change as the central characteristic of the cancer cell. Rous[16] in the fourth Barnard Hospital lecture said:

> All in all it now seems superfluous and a bit grandiose to assume, as has been easy in the past, that the cause for the cancerous process is a secret bound up with life itself. There is no need to suppose that tumor cells are the outcome of some inherent, fundamental cell change, though this is a favorite supposition.

The term "virus" has been used to designate many different agents. It is used here in the sense of an extraneous, autonomous, invasive, filtrable, parasitic agent of submicroscopic size. If cancer is due to a virus, as here defined, we are forced to postulate an almost ubiquitous parasite or group of parasites of mammals which remain latent for the most part but which may be activated by a large number of agents or by certain disturbances of the normal biochemistry of the organism. A strikingly clearcut example of the experimental induction of cancer by the latter means is seen in the work of Woolley, Fekete and Little.[17] They were able to show that a hormonal deficiency may set up internal environmental conditions which are unfavorable to the proper functioning of normal cells. When mice of the CE strain were gonadectomized at 2 days of age, carcinomas of the adrenal cortex developed. The frequency increased with age up to 1 year, when it reached 100 per cent. No such tumors were observed in normal male and female mice of the CE strain. In this instance the organism apparently is forced to adjust to a hormonal deficiency, the burden of which falls, it seems, on the cortical cells of the adrenals. The final result is cancer. A special type of adjustment: other mice strains gave hypertrophy—not cancer. When cancers are induced in this manner it does not appear necessary to assume that the activation of a latent virus is the essential factor, although it cannot be excluded completely. At any rate, no parasitic virus agent has yet been proved to be present in any mammalian cancer at all times. The work of Milford and Duran-Reynals[18]

11. Valade, J.: Compt. rend Acad. d. sc. **204**: 1281, 1937.
12. Cramer, W., and Stowell, R. E.: Cancer Research **3**: 668-681, 1943.
13. Brues, A. M., and Jackson, E. B.: Cancer Research **1**: 557-563, 1941.
14. A successful but temporary adjustment from the standpoint of the cancer cell, a maladjustment from the standpoint of the organism as a whole. The temporary adjustment can be made permanently successful for the cancer cell if man chooses to interfere by transferring the cancer cells from animal to animal indefinitely or by continuous in vitro cultivation, thus providing a suitable environment.
15. Ewing, J.: Pub. Health Rep. **44**: 2093-2101, 1929.
16. Rous, Peyton: The Nearer Causes of Cancer, J. A. M. A. **122**: 573-581 (June 26) 1943.
17. Woolley, G. W.; Fekete, Elizabeth, and Little, C. C.: Science **97**: 291, 1943.
18. Milford, J. J., and Duran-Reynals, F.: Cancer Research **3**: 578-584, 1943.

has shown that the same virus (Rous I) injected into chick embryos produces hemorrhagic lesions as a rule whereas in adult chickens it produces tumors. The type of lesion produced is dependent on the resistance of the host. Neoplasia results when the host is endowed with a certain resistance to the virus. Lower resistance results in destructive lesions.

The recent studies of Greenstein [19] at the National Cancer Institute yield additional evidence regarding the special characteristics of cancer cells. He has shown that the enzymatic pattern among the cancers of any one species is uniform and is independent of both the etiology and the tissue of origin. In other words, his data suggest that, regardless of the inciting agents or the tissue of origin, cancers in a given species converge toward a common tissue type. Furthermore, the enzymatic pattern of a tumor tends to resemble that of the homologous embryonic tissue rather than that of the adult tissue of origin. Hence it is natural to ask whether or not cancers represent a reversion or a metabolic dedifferentiation. The tissues of benign tumors do not reveal this pattern, as far as tests have been carried.

While it is true that there is no single measurement of metabolic activity (oxygen consumption, carbon dioxide yield, anaerobic and aerobic glycolysis) characteristic of cancer cells, they possess, nevertheless, an overall pattern which also can be characterized as approaching a more primitive or embryonic type than that of the normal adult tissue. Hyperplasia of cells is observed in many noncancerous conditions, notably the infectious granulomas; but in such conditions either the host dies as a result of the infection or recovery results and all the infected cells assume normal functions. In contrast, the cancer victim succumbs not because of the activity of a demonstrable parasite but, as far as we know, death is due to excessive activity of the host's own cells.

There is more or less complete agreement that the genetic constitution of the host is a major factor in the genesis of all cancers. In no other condition does one find such a high degree of species and individual specificity. Highly inbred homozygous strains of experimental animals have long been essential tools in the study of cancer, for in such animals genetic variability is minimized, thus permitting the evaluation of the effects of nongenetic factors. Furthermore, by selecting and inbreeding the geneticist has succeeded in developing strains that have uniformly high incidences of various neoplasms such as mammary, lung, liver and even gastric tumors. Until recently, only in these homozygous strains could most tumors be maintained through transplantation, although now Greene [20] has developed a technic whereby he has been able so to adjust the cancer cells of one species that they grow readily in the body of a foreign species. Greene believes that the ability of cells to grow in another species may be used as a measure or criterion of their malignancy. He says "Malignancy transcends species specificity."

In concluding this brief discussion of the cancer cell, I believe that a statement made by Cowdry [21] in 1940 is still valid. He said:

> The types of malignant cells probably outnumber those of the normal cells from which they arise. To add together what are thought to be the outstanding features of all of them and to construct a synthetic picture of what the cancer cell is like would be both unjustifiable and misleading. . . . Malignancy is a functional attribute. . . . There is no satisfactory evidence that malignant cells of man possess anything, virus or otherwise, which is wholly absent in normal cells.

According to Darlington,[22]

> There is nothing surprising in the fact that reproductive particles can suddenly appear in the cytoplasm by the action either of the mutafacient nucleus or of external carcinogens, nor again that such particles may either be transmissible or only transplantable.

The hypothetical "plasmagenes" as well as viruses are regarded by Darlington as cytoplasmic nucleoprotein determiners which may be stable and useful cell components in one genotype and act as destructive agents in another.

Claude [23] has pointed out that so far organic structures found to exhibit the property of self duplication have been shown to contain nucleic acid of the one type or the other, and Hargitt [24] feels justified in speculating that "substances containing nucleic acids or nucleoproteins are capable of reproducing themselves."

And so the search for the secret of the cancer cell must continue as one of the most important fields of experimental biology, a field which may not yield immediately a solution of the cancer problem but which will certainly add interesting and significant knowledge of living processes as by-products to our chief objective.

## THE PRESENT STATUS OF CANCER CONTROL AND RESEARCH

In the United States four philanthropic foundations use their funds exclusively for the study of cancer. These foundations are (1) the Anna Fuller Fund, (2) the Finney-Howell Research Foundation, Inc., (3) the International Cancer Research Foundation and (4) the Jane Coffin Childs Memorial Fund for Medical Research. For more than thirty years the American Society for the Control of Cancer limited its activities largely to the dissemination of information about this disease. Now this organization has awakened to a fuller realization of its duties and responsibilities, has changed its name to the American Cancer Society and has launched a far broader and more ambitious program. Its new plans propose, in addition to lay and medical education, to render financial aid in support of the diagnosis and treatment of the cancer patient, to provide equipment and supplies for laboratories, clinics and hospitals, to house and care for the advanced cancer patient and to finance organized cancer research.

The University of Texas has set up at Houston a hospital for cancer research.

The University of Minnesota has established an Institute of Cancer Biology and is the first institution in the world to offer a doctorate in cancer biology.

Hahnemann Medical College in Philadelphia has a full time Department of Oncology and in this respect is unique among the medical schools of this country.

Cancer education is being extended to the curriculum of the public schools. In the summer of 1942 the New York Association of Biology Teachers adopted a new syllabus for the tenth year biology classes in schools throughout the city. For the first time the subject of cancer was included.

19. Greenstein, J. P.: Unpublished data, to appear in the Journal of the National Cancer Institute.
20. Greene, H. S. N., and Lund, P. K.: Cancer Research **4**: 352-363 (June) 1944.
21. Cowdry, E. V.: Properties of Cancer Cells, Arch. Path. **30**: 1245-1274 (Dec.) 1940.
22. Darlington, C. D.: Nature, London **154**: 164-169 (Aug. 5) 1944.
23. Claude, A.: Biological Symposia **10**: 111-130. J. Cattell Press, 1943.
24. Hargitt, G. T.: Science **100**: 343-348 (Oct. 20) 1944.

The federal government by an act of Congress (approved Aug. 5, 1937) created the National Cancer Institute in the United States Public Health Service. This institute is a division of the National Institute of Health. Drafted along liberal lines, the act empowers the Surgeon General, in cooperation with a National Advisory Cancer Council, to (*a*) conduct, assist and foster research, (*b*) provide training and instruction in the diagnosis and treatment of cancer, (*c*) provide research fellowships in the institute, (*d*) secure for the institute consultative services and advice of cancer experts from the United States and abroad, (*e*) cooperate with state health agencies in the prevention, control and eradication of cancer and (*f*) procure, use and lend radium to other agencies and institutions.

The National Advisory Cancer Council, created under the same act, is authorized (*a*) to review research projects or programs submitted to it or initiated by it relative to the study of the cause, prevention or methods of diagnosis and treatment of cancer, (*b*) to collect information and make it available to scientists and the public and (*c*) to review applications for grants-in-aid for research and to certify to the Surgeon General its approval of grants for such projects which show promise. Several such grants have been made to Barnard Hospital.

At the present time fourteen of our forty-eight states have full time divisions of cancer control. In three of these states (Missouri, New Hampshire and Vermont) the law is administered by cancer commissions, in ten (Alabama, Connecticut, Georgia, Illinois, Maine, Massachusetts, New York, Rhode Island, South Carolina and West Virginia) by the State Department of Health, in one (Texas) by the state university.

A complete state cancer control program usually provides for:

1. The establishment of tumor clinics or hospitals for the diagnosis and treatment of cancer.
2. Reporting of cancer cases by physicians, hospitals and pathologic laboratories to the division of cancer control.
3. A system of follow-up of cancer cases.
4. Pathologic laboratories for tissue diagnostic service.
5. Statistical and epidemiologic records of case reports, death reports and pathologic laboratory reports.
6. Dissemination of information about cancer to physicians and to the public.

In that phase of the cancer problem dealing with the actual care of the patient, the Veterans Administration has perhaps a greater responsibility than has any other institution. The population of cancer cases in the Veterans hospitals has been steadily rising for several years and has now reached a total of about 1,400. At the Veterans Facility, Hines, Ill., there are 500 beds exclusively for cancer patients, and a new 600 bed cancer hospital is under construction. In New York City there are 200 beds for cancer patients, in Los Angeles 125 beds, in Portland, Ore., 50 beds and in Atlanta, Ga., 50 beds. As many as 800 cancer cases have been admitted to Veterans hospitals in one month, and the average for the year 1944 so far has been well over 700 new cases per month. According to the medical director, Dr. C. M. Griffith, 4 or 5 thousand beds will be needed for cancer cases alone, when the 10 to 15 million veterans of the present war reach the age of high cancer incidence, twenty to twenty-five years from now. The concentration of these cases in large government hospitals should be a rich source of material for extensive clinical cancer studies and experimental therapy.

Increasing interest in the coordination and integration of cancer research on a national scale is evidenced by the number of conferences held during the last few years dealing with various aspects of the problem. A conference on gastric cancer was held Oct. 11 and 12, 1940 under the auspices of the National Advisory Cancer Council at the National Cancer Institute, Bethesda, Md. The proceedings were published in the February 1941 (volume 1, number 4) issue of the *Journal of the National Cancer Institute*. This gathering was unique in that it was the first time the laboratory investigator, the surgeon, the radiologist and the pathologist were brought together to exchange ideas and experiences and to develop plans for cooperative research on gastric cancer.

In June 1942 an endocrine-cancer conference was held at Atlantic City. More recently (September 1944) a conference of parental influence in relation to human cancer was held at the Roscoe B. Jackson Memorial Laboratory, Bar Harbor, Maine. The difficulties and the barriers that need to be overcome in launching studies in human genetics were fully recognized. However, the conference pointed out the need for closer cooperation between those working with cancer in experimental animals and those working with human cancer as a means of suggesting problems from one field which are suitable for attack from another. It was concluded that animal experimentation had succeeded in identifying in cancer two major and interacting influences. One of these is genetic, the other nongenetic. The nongenetic influences include certain chemicals, certain physical agents, endocrine imbalance and agents sometimes present in certain body fluids. In man, some nongenetic influences have been identified and genetic influences have been strongly suggested, at least in some forms of cancer. This evidence makes it imperative that we extend our knowledge of the interaction of these two major influences to man, and in such studies it is desirable to include all types of neoplasia, benign and malignant, as well as conditions leading to either of these.

A second gastric cancer conference was held recently (Nov. 11, 1944) at Memorial Hospital in New York City. Some of the papers read and the subjects discussed were (*a*) Gastric Physiology in Relation to Gastric Carcinoma, (*b*) Experimental Gastric Cancer in Mice, (*c*) Metabolic Abnormalities in Gastric Cancer, (*d*) Disturbances of Sugar Metabolism in Gastric Cancer, (*e*) Chemical Changes in Gastric Mucosa, (*f*) Observations on Chronic Gastritis and Cancer and (*g*) the Occurrence of Multiple Cancers of the Human Gastrointestinal Tract. The proceedings of this conference will appear in an early issue of the *Journal of the National Cancer Institute*. In the future, conferences on the cytology of the cancer cell, on the role of radiobiology in cancer, nutrition in relation to cancer and other phases of the problem will be sponsored as the need arises.

At the present time the National Cancer Institute acts as a repository for various inbred strains of animals and numerous transplantable animal cancers. We maintain 31 transplantable tumors in mice, 3 in the rat, 1 in the guinea pig and 1 in the rabbit. There are also available 8 inbred strain of mice, 1 inbred strain of rats and 1 of guinea pigs. These are essential biologic tools of cancer research. Frequent requests are received for these materials, which are furnished, of course, free of charge.

Perhaps it is apparent now that the attack on the cancer problem requires the combined efforts of many men trained in many different branches of the basic sciences of biology, chemistry and physics.

In conclusion, I may summarize by saying that the cancer problem as seen from the federal level includes the education of the public, the postgraduate education of physicians in the diagnosis and treatment of cancer, the loan of radium to hospitals and tumor clinics, the assisting of the states in setting up full time departments of cancer control in the respective state boards of health, advice and guidance to universities and medical schools desiring to establish departments of oncology or cancer biology, the establishment of prevention and case finding clinics, grants-in-aid to various institutions and individuals for cancer research, promotion of conferences on the various phases of the cancer problem, and the continuation of long time cooperative studies in the fundamentals of cancer biology. All this can best be accomplished, I believe, through the appointment of special cooperative committees. Such committees should be selected from members of the various cancer research fundations, from the American Cancer Society, from the American Association for Cancer Research and from various other institutions that are actively engaged in cancer control, prevention, therapy and research.

The National Cancer Institute realizes that the solution of the cancer problem is not a one man or a one institution job and that under the National Cancer Act we have certain mandatory duties in cancer control. We desire to accept our share of this responsibility. Our research program in no way precludes or hampers research in other institutions. On the contrary, through the efforts of the National Advisory Cancer Council and our grants-in-aid, private research will be stimulated and encouraged.

## ANESTHESIA STUDY COMMISSIONS

HENRY S. RUTH, M.D.
PHILADELPHIA

Many reasons may be presented to support the fact that the specialty of anesthesiology at the present time is an accepted and expanding field within medical practice. It is also true that many controversial aspects still exist within it. Well founded, scientific differences of opinion are healthy and thought stimulating. On the other hand, conceptions held through lack of information or experience usually prove detrimental to any movement. This is particularly true of anesthesiology, which, representing one of the more recent comprehensive branches of medicine, has not had sufficient time to fulfil more than a small portion of the possible opportunities for service. Consequently there are today more instances of inefficient application of anesthesia perhaps than of correct management. Therefore any measure which disseminates knowledge of proper anesthesiologic thought, particularly among those not actively engaged in the application of modern anesthesiology, would appear valuable to those concerned, including the profession as a whole and candidates for surgery. For these reasons a description of anesthesia study groups probably would be valuable at this time.

### OBJECTS OF ANESTHESIA STUDY GROUPS

The current method of reasoning and deduction followed by anesthesiologists is not too well known outside of the specialty. The surgeon naturally desires a surgical field which facilitates his manipulations to the fullest extent, but he should not demand a method of anesthesia in order to obtain this that would also increase the mortality and morbidity rate of his patients. He would never do so, of course, if he was aware of the potentialities involved. The internist is mainly concerned with proper diagnosis and, where surgery is indicated, the proper preoperative and postoperative care. The anesthesiologist, whose entire attention is directed to the anesthesia, is concerned with all these factors and is equipped to understand more thoroughly the effects of anesthesia on both normal and abnormal patients and their significance with regard to the postoperative course. Therefore a constant interchange of thought is indicated between surgeon, internist and anesthesiologist in the best interests of patients. Intramurally this is accomplished by staff conferences. The formation of anesthesia study groups achieves the same object between institutions by a discussion of fatalities occurring from anesthesia and of other interesting anesthetic situations. A medical staff handicapped by a poor or mediocre anesthesia service may obtain much information from the opinions expressed by surgeons and internists connected with institutions where modern anesthesiology is applied and from the statements of anesthesiologists in attendance at such discussions. The number of possible variables contributing to postoperative complications is large, and, unless an anesthesiologist is present and contributes to a discussion of them, instances in which anesthesia has a direct bearing on their production ofttimes are overlooked, or, less frequently, the anesthesia may be blamed erroneously for the difficulties. In addition, no new anesthetic agent or method can be truly evaluated until a large series of administrations is consummated. Certain detrimental aspects may appear either late or early in the series. Through the discussions at study groups, all institutions participating will have the advantage of the experiences of others and will profit from them shortly after they take place.

### HISTORICAL

To the best of my knowledge, the Anesthesia Study Commission of the Philadelphia County Medical Society was the first instance of the formation of a group for this purpose by a representative body of organized medicine. In 1935, at my suggestion, the Anesthesia Mortality Committee of that society was appointed. It consisted of surgeons, internists and anesthetists from Philadelphia to study fatalities resulting from anesthesia. The work of the committee was originally patterned after the activities of the maternal mortality committees. Blanks were formulated for reporting fatalities. Originally the fatalities studied were limited to those occurring before reaction from anesthesia was complete.

In 1937 the status of the committee was changed to that of a commission, appointive every three years, instead of annually, as before. The number of physicians on the commission was increased, and representatives of some of the surgical specialties were included. About this time we observed that fatalities frequently were not reported to us. On inquiry we learned that the phrase "before reaction from anesthesia" was either unconsciously or wilfully interpreted as "fatality resulting from anesthesia." From our activities it was evident that a material number of fatalities were being classified as sudden deaths from other causes. We therefore requested a report on fatalities occurring the day of or the day after a surgical operation. A noticeable increase in the number of reports was evident immediately.

From the Section of Anesthesiology, Hahnemann Medical College and Hospital of Philadelphia.
Read before the Section on Anesthesiology at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 14, 1944.

In 1940 the name of the commission was changed to the Anesthesia Study Commission. This was proposed for a twofold purpose. When a request for a report was received from the "Mortality Commission" it appeared that some hospitals believed that the group desired to unearth incriminating information, rather than function as an educational venture. Secondly, under the former title the program of activities was limited necessarily to fatalities only. Under the title of Study Commission many interesting discussions could be held on case reports in which a fatality had not occurred but where many factors of an informative nature could be discussed concerning an administration of anesthesia following which the patient recovered. Therefore we are now active under this designation.

A similar study group was initiated in 1941 by a few Cleveland anesthetists titled the Anesthesia Study Commission of the Ohio Society of Anesthetists. In 1943 there was established the Committee on Anesthesia Mortality of the American Society of Anesthetists, Inc. These two groups function by mail, the former by means of mimeographed sheets to its members and the latter by publications of case reports in the News Letter of the society. Both study fatalities and complications occurring during or subsequent to anesthesia, by publishing case reports and later making known at least the more valuable comments and discussions. These types of study organizations are undoubtedly of value, but their activities are confined mainly to anesthesiologists. Their work should not be minimized and should be continued, but, at the same time, they do not offer the opportunity for exchange of thought between the various specialties of medicine.

In order to explain more fully the possible functions of an anesthesia study group, the activities of the Anesthesia Study Commission of the Philadelphia County Medical Society will be explained in some detail.

## THE COLLECTION OF REPORTS

Blanks of various types on which case reports are made have steadily been used. Reports are solicited from all hospitals in the county. Members of the commission are held responsible for reports from the institutions which they represent. An attempt is made to represent the remaining hospitals by means of members of the society, not on the commission but selected by its officers, who are friendly and sympathetic toward the work. The reporting of cases, unfortunately, is on a purely voluntary basis. This system, naturally, is not entirely efficient, in that not all fatalities are made known to us. This is true especially of deaths occurring in institutions which maintain poorly conducted departments of anesthesia. These hospitals probably have the largest number of fatalities from anesthesia, and they therefore may believe that their difficulties should be concealed. On the other hand, it is those organizations which could profit to the greatest extent from the discussions. This handicap is being overcome and, we believe, will steadily diminish in the future. At the present time a growing number of instances of reportable cases from these sources is called to our attention through the efforts of certain of their own staff who are advocating an improvement of the anesthesia service or by word of mouth from other members of the profession whose interest has been stimulated by the work. Our system of reporters, unfortunately, is somewhat disrupted by wartime restrictions on the number of available interested physicians who would be cooperative, but there appears to be every reason for the restoration of this system immediately in the postwar period, in view of the fact that it was so successful in the prewar period.

The outstanding problem militating against the greatest possible value of the study rests in the reliance on voluntary reports. Well trained and competent anesthesiologists are completely cooperative in supporting the investigation. It is natural that reports from such sources rarely constitute obvious errors—those most indicative of correction. Until some type of official pressure or further stimulation of interest is applied, this condition cannot be rectified rapidly. One solution may be offered in those states where the date of a surgical operation is included on the death certificate as well as the date of death. By means of the active support of the officers of the county medical society, the Department of Vital Statistics or similiar organizations could supply the commission with the names of the patients and the institution where a fatality has occurred the day of or during a determined interval following surgical procedures. The reporter representing that hospital could then execute the reporting blank for the commission on the fatality. In some countries it is legally mandatory that these fatalities be reported.

## DISCUSSION OF REPORTS

Reports are sent to the society headquarters or to the chairman or secretary of the commission. Meetings are held once a month, which meetings are open to all practicing physicians, residents and interns. One teaching institution, before the outbreak of the war, valued the activities of the commission to the extent that at least one representative of the surgical department was required to attend each meeting of the commission in order that a report might be given at the next surgical conference of that institution. Our meetings have been of sufficient value to attract numerous nonresident visitors. It is unusual for surgeons and practitioners of the surgical specialties who have once attended not to be interested to the extent of repeating their visits.

For the open monthly meetings the chairman selects the most interesting case reports and presents them from the chair. At no time does the chairman mention the name of the patient, the name of the surgeon or the name of the hospital connected with the affair. I believe that this is most important and should be followed by those who may be stimulated by this paper to initiate groups in their own localities. Exception is made only when an anesthetist or a surgeon may desire advice on a particular problem and publicly announces that the case report originated in his own practice and offers to supply further information during the discussion.

After the reading of the case report the discussion is opened to the floor. Visitors as well as members of the commission are encouraged to take part. The discussion may involve any aspect of the report. Anesthesiologists are very free in their criticism of anesthetic methods employed, but they are just as cautious in commenting on any error of surgical diagnosis, judgment or technic. This aspect of the discussion is supplied by the surgical members or visiting surgeons. If this accepted rule is not observed, the chair accepts the prerogative of maintaining the discussion within these prescribed lines. Internists contribute by making suggestions concerning preoperative, supportive and postoperative treatment. At the conclusion of the discussion a vote is taken from the members of the commission to determine, first, whether the majority believe the fatality is preventable or unpreventable, both

from the point of view of anesthesia. Only preventability from anesthesia is recorded. For example, a purely surgical death, acknowledged as such by the surgical consultants and visiting surgeons, would be classified as unpreventable from the point of view of anesthesia. If the fatality is voted preventable, a further vote is requested to decide the factors which may have initiated the death. These may include, for example, overdose or improper selection of preanesthetic drugs, an unwise selection of the anesthetic agent or method, errors in the technic in the application of the anesthetic agent, lack of or improper supportive measures during anesthesia, or improper postanesthetic care. Some instances have occurred in which it has been impossible for the commission to decide whether the fatality has been preventable or unpreventable, whereupon a request may be made for additional data.

Periodic closed meetings are held by members of the commission only, to discuss fatalities obviously preventable or unpreventable or not involving interesting and instructive aspects. Such discussions are brief, and the deaths involved are rapidly classified and recorded.

### MANAGEMENT OF FINDINGS

The conclusions of the commission are recorded by the secretary. In addition, a stenographer is present at the meetings to transcribe the discussion. From these data, statistics are filed. Public reports of the commission's activities are made at intervals. A complete report, based on ten years' activities of the commission, is contemplated. This, we believe, will be informative to the medical profession in general on the problems involved in and the results of the application of anesthesia.

### INTERESTING DATA ALREADY ACCUMULATED

It would seem proper at this time to call to attention some of the more interesting findings and deductions from the work of this commission. At the inception of the work of the commission, numerous statements were made to the chairman that in a medical center such as Philadelphia there would not be sufficient fatalities which could be considered entirely or partially attributable to anesthesia to occupy the attention of such a commission. Suffice it to say that in our files today we have 80 case reports as yet undiscussed, although the meetings have been held regularly except during the summer months. Since the commission was formed, of the cases classified 67 + per cent were voted as preventable and 22 + per cent as unpreventable from the point of view of anesthesia. The remainder required additional data for classification. The number of instances in which a fatality has been diagnosed as sudden death from other causes, when mismanagement somewhere along the line of anesthetic application is obvious, is indeed surprising. The stated causes in such instances are usually given as coronary occlusion, coronary embolus, cerebral embolus, pulmonary embolus or acute cardiac failure.

A common preventable cause of death was the lack of resuscitative measures or institution of ineffective ones. Numerous instances were encountered in which the patient was definitely hypoxic and oxygen was not administered to rectify the condition, or a supply of oxygen was applied to the face of a patient in respiratory paralysis, without the instituting of means of supplying oxygen to the alveoli of the lungs. Again, many times cardiac stimulants were administered to patients requiring inflations of oxygen or replacement therapy by means of the correct indicated fluids, plasma or blood. In the hands of the uninformed, when anesthetic difficulties are encountered, intracardiac injections of epinephrine, often in overdosage, are too popular and the simple, indicated corrective measures ignored. It was the consensus of the commission frequently that, if the patient had not already succumbed, the attempted remedial measures alone would have been sufficient cause of death. It would appear that the more dramatic needles, analeptics and stimulants too often have a wider application than the indicated patent airway and simple, quiet inflations of the lungs with pure oxygen.

Preventable deaths were not uncommon because of overdosage of preanesthetic sedative drugs, errors in anesthetic judgment, improper selection of the anesthetic agent and method, tolerance of respiratory obstruction during or following anesthesia, inadequate oxygenation, especially with cardiac patients, and improper anesthetic management in general. One of the questions asked for on the report is the surgeon's diagnosis of the probable cause of death. It was interesting to note the numerous instances in which the surgeon believed the fatality was totally applicable to other causes, but the commission, unanimously and without dissension, voted the cause of death as entirely preventable from the standpoint of anesthesia.

### COMMENT AND SUMMARY

The probable foremost benefit is the direction of the attention of the medical profession in general to fatalities occurring from improper anesthesia and its mismanagement, which otherwise would be considered attributable to other causes. If the inception of study groups of this character was functioning more generally, a more accurate estimate of the mortality rate from anesthetic practices could be obtained. The knowledge of basic improvements in the choice of agent, technic and general management of anesthesia, indicated resuscitative measures, and correct preoperative and postoperative care could be more widely disseminated. Finally, such group studies would encourage the keeping of more accurate anesthetic records, which to date we have found to be sadly inadequate in general but which are so necessary in determining the role played by anesthesia in the surgical mortality rate.

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## ABSTRACT OF DISCUSSION

FREDERICK P. HAUGEN, Philadelphia: The death of a person while under the influence of an anesthetic constitutes a major tragedy of surgery. The death may be, and frequently is, unpreventable. It is through intellectually honest discussion of the factors leading to the tragedy that progress can be made in preventing similar occurrences. Such discussion between surgeon and anesthetist may be devoid of results, for each tends to excuse or blame the other. There may be much to be learned, however, by the objective discussion of such cases by a group as has been described by Dr. Ruth. Operating room tragedies are frequently so efficiently covered up that scarcely any one outside the immediate witnesses will know of them. There are good reasons why this is done, of course, but it emphasizes the necessity for extreme tact in obtaining information for study commissions. It also emphasizes the necessity of respecting the anonymity of the principals. It is gratifying to us who are on the commission to note the interest anesthetists and surgeons have in learning the opinions on their cases, for often they will disclose their identity to clear up some point of discussion. A representative of one of the larger life insurance companies told me that his company considered that an individual undergoing surgery had one chance in four hundred of dying from the anesthetic alone. That was a rather

startling statement and quite in contrast to one by a gynecologist who expressed surprise that our anesthesia study commission would have cases to study. Probably the true figure for anesthetic deaths is somewhere between these, and it would seem that the two extremes could be brought closer together by a proper interpretation of the cause of deaths. There is a tendency to look for causes beyond temporal control, and convenient diagnoses are coronary occlusion, pulmonary or cerebral embolism, or status lymphaticus. The apparent willingness of some of the men entrusted with patients' lives to condone the conditions which permit ignorance of the fundamentals of physiology and pharmacology to expose people daily to needless risk is the disturbing feature. It offers a challenge to anesthetists to stimulate interest in their own communities in a study of anesthesia morbidity and mortality. To Dr. Ruth goes the credit for showing that this can be done.

DR. ROLLAND WHITACRE, Cleveland: In an effort to decrease the surgical mortality rate it has always been a common practice for anesthetists and surgeons to discuss the fatalities and complications resulting from anesthesia. Unfortunately the value of these discussions is limited because they are usually confined to the staff of only one institution. Other physicians do not have an opportunity to study these cases objectively because they are rarely reported in the literature. From an educational point of view this represents a tremendous waste of clinical material. As physicians interested in the progress of anesthesiology, we are greatly indebted to Dr. Ruth for organizing and putting into successful operation a method whereby an increased number of physicians can study the clinical reports of fatalities during anesthesia. Dr. Ruth's work in Philadelphia has served as a stimulus for the formation of anesthesia study commissions on a statewide and later a nationwide basis. This Study Commission of the Ohio Society of Anesthetists, which was inaugurated in 1941, has not only served as a means of disseminating information regarding problems in anesthesia but has also been an important factor in the development of an active state society devoted to the advancement of anesthesiology. Perhaps the most important function of the anesthesia study commissions is to acquaint the medical profession better with the number of complications and deaths that occur as a result of anesthesia. Because of incomplete and inaccurate records there is a prevailing impression that complications rarely occur during anesthesia. An abundance of evidence is being accumulated by the various study commissions and groups interested in keeping accurate records that this opinion is not supported by facts. Many more deaths result from improper anesthesia than is generally realized. These findings bear out the remarks made by Dr. John C. Warren in his presidential address in 1850 at the fourth annual meeting of the American Medical Association. Dr. Warren at that time, only four years after anesthesia was introduced, warned of the dangers of relegating this important service to improperly trained individuals. In the succeeding ninety years no evidence has been presented to alter this opinion.

DR. HENRY S. RUTH, Merion Station, Pa.: A project of this kind can be performed in an entirely anonymous fashion. Also it emphasizes and exposes many facts otherwise concealed. I trust that this small venture of ours may spread at least to some extent to other portions of the country.

**Hospital Facilities in Formosa.**—There are many government, public and private hospitals scattered throughout Formosa, but those of any considerable size are limited; only a few have a capacity greater than 80 beds. The majority of the private hospitals and clinics have 10 to 50 beds. Of the large hospitals, all except four or five are administered by the government. Taihoku is the medical and hospital center of the island and the largest and best hospitals are located there, as are a leprosarium and an institute for the control of venereal diseases. There is only one small tuberculosis sanatorium on the island. There is a medical school attached to the Imperial University of Taihoku. —Simmons, James S., and others: Global Epidemiology, Philadelphia, J. P. Lippincott Company, 1944.

# THE THERAPEUTIC INDICATIONS OF THE SULFONAMIDES AND PENICILLIN

FRANCIS G. BLAKE, M.D.
NEW HAVEN, CONN.

The indications for chemotherapy with the sulfonamides and penicillin may be divided into those which are well established through common and consistent experience and those concerning which there is uncertainty either because of conflicting results recorded in the literature or because experience is still too limited or uncontrolled to provide a definite conclusion.

Because of the limitations of time I shall confine my remarks largely to the positive indications for the use of the sulfonamides and penicillin, avoiding discussion of debatable territory and the long list of virus, bacterial, mycotic, rickettsial and other infections in which neither the currently available sulfonamides nor penicillin are indicated.

The first and most important indication is the etiology of the infection in the patient to be treated. Factors which may modify this indication and the choice of drug to be used are the site of the infection, the nature of the pathologic process, the immediate and potential severity of the infection both with respect to complications and ultimate outcome, and, in the case of the sulfonamides, known or potential liability of the individual patient to the more serious toxic effects of these drugs.

The infections which are curable or, if not cured, favorably modified by the chemotherapeutic agents under discussion may be divided into three groups with respect to etiology:

1. Those in which both the sulfonamides and penicillin are more or less effective, though not necessarily equally so, namely certain gram positive and gram negative coccic infections: hemolytic streptococcus, pneumococcus, staphylococcus, Streptococcus viridans, meningococcus and gonococcus.

2. Those in which the sulfonamides are of value but not penicillin, namely gram negative bacillary infections such as those caused by the colon bacillus, dysentery bacilli, Hemophilus influenzae, Friedländer's bacillus and Ducrey's bacillus.

3. Those in which penicillin is of value but not the sulfonamides, namely syphilis, yaws and possibly other spirochetal infections and those due to the Clostridia—gas gangrene.

As for the first group, in the less severe hemolytic streptococcic infections in which there is tissue invasion without suppuration, necrosis or bacteremia, such as erysipelas or lymphangitis, the sulfonamides are ordinarily sufficiently effective to be indicated as the drug of choice, if for no other reason than because of simplicity of administration. The same may be said of the milder upper respiratory mucous membrane infections, such as tonsillitis or pharyngitis, although the real value of the sulfonamides in these infections is still debatable.

In the more severe hemolytic streptococcic infections with suppuration or necrosis and with or without bacteremia penicillin appears to be much more effective

Read in a panel discussion on "Chemotherapy" in the General Scientific Meetings at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 12, 1944.

and consequently the drug of choice. It often succeeds in bringing about a cure when the sulfonamides have failed. Included in this group are severe cellulitis, mastoiditis with or without intracranial complications, meningitis, pneumonia, empyema, pericarditis, endocarditis, peritonitis, puerperal sepsis, osteomyelitis, suppurative arthritis and infected wounds. In such conditions as empyema, meningitis and arthritis it must be injected locally as well as intravenously or intramuscularly.

In pneumococcic infections the sulfonamides have proved sufficiently effective in lobar pneumonia to justify their continued use as the drug of choice at the beginning of treatment, but one should be prepared to shift to or add penicillin promptly in cases that do not respond quickly to the sulfonamides. In very severe pneumonia and particularly in the aged and in other pneumococcic infections such as mastoiditis, meningitis, empyema, endocarditis and peritonitis penicillin is more effective and consequently indicated from the start.

In staphylococcic infections such as furunculosis, carbuncles, osteomyelitis, mastoiditis with or without intracranial complications, meningitis, sinus thrombosis, pneumonia, lung abscess, empyema, pyelonephritis and wound infections with or without staphylococcemia the sulfonamides, though occasionally beneficial, have on the whole been disappointing. Penicillin, on the other hand, has proved very effective in a high proportion of cases and is unequivocally the drug of choice. Failures do occur, of course, possibly because of the fact that some strains of staphylococci contain penicillin inhibitor, as recently shown by Kirby, similar in its inhibiting action to the penicillinase found in colon bacilli.

Streptococcus viridans subacute bacterial endocarditis has rarely responded more than temporarily if at all to the sulfonamides. Recent experience with large amounts of penicillin given in three to four week courses indicates that in some cases it may be effective in inducing remissions. Although much more experience is needed to define its ultimate usefulness, its trial at least is indicated.

In the two important gram negative coccic infections meningococcic and gonococcic the sulfonamides have proved so effective in the former that they are still indicated and penicillin should be resorted to only in those cases which fail to respond to the sulfonamides or possibly as an additive treatment in the very severe fulminant cases.

Penicillin, now demonstrated to be more effective than the sulfonamides in curing gonococcic infections, would appear to be indicated at least in all cases complicated by arthritis, ophthalmia, endocarditis, pericarditis, peritonitis, epididymitis and prostatitis and in all cases of sulfonamide resistant gonorrhea. Whether it will properly replace the sulfonamides in simple acute urethritis remains to be determined.

Of the second group of infections, in which the sulfonamides are indicated and penicillin is contraindicated because it is ineffective, little need be said except to reiterate that they comprise a group of gram negative bacillary infections including colon bacillus infections, particularly of the urinary tract, Hemophilus influenzae otitis media, mastoiditis and meningitis, the bacillary dysenteries, Friedländer bacillus infections, including pneumonia and soft chancre.

Similarly little need be said of the third group, in which the sulfonamides are of little or no value and in which penicillin appears to be indicated, other than to state that the exact usefulness of penicillin in human clostridial infections remains to be determined and the final definition of its already established usefulness in syphilis will require prolonged study.

789 Howard Avenue.

## Clinical Notes, Suggestions and New Instruments

### STAPHYLOCOCCUS ALBUS SEPTICEMIA FOLLOWING NEPHROLITHOTOMY

#### RECOVERY WITH PENICILLIN

ROBERT H. HERBST, M.D., AND JAMES W. MERRICKS, M.D., CHICAGO

Mortality with hemolytic Staphylococcus albus septicemia occurs in about 90 per cent of cases. We have not previously seen a patient survive with this type of infection. When the skin is covered with a myriad of pustules they reflect the fulminating state of the infection in every organ in the body. In a previously unreported personal case several years ago following litholopaxy death ensued although a blood sulfathiazole level of 7.5 mg. was maintained. The skin of the patient was studded with minute white pustules and at postmortem examination small collections of pus, the result of infected emboli, were found throughout the body. The present patient recovered with penicillin after having been resistant to sulfadiazine. Recovery occurred in spite of hundreds of these tiny pustules in the skin, accompanied by bilateral bronchopneumonia, toxic myocarditis, toxic hepatitis, acute glomerulonephritis and renal abscess.

Some authors believe that a blood sulfonamide level of 4 to 5 mg. is sufficient to bring about recovery from staphylococcemia. Apparently this depends on the virulence of the organism. Strains of Staphylococcus albus may be very resistant to chemotherapy. Varieties of Staphylococcus aureus showing white mutations may be difficult to treat. Our patient who recovered falls in the latter category, as cultures from his infected left kidney changed from Staphylococcus albus to aureus twice in a period of four years.

#### REPORT OF CASE

A man aged 37, an Italian, was admitted to the Presbyterian Hospital April 19, 1944 complaining of almost constant pain in the left flank which had been present for many months. Stones had been removed elsewhere from the left kidney nine years previously. The temperature was normal, the heart and lungs were clear, the pulse rate was 88 beats per minute, the blood pressure was 168/100. The urine was clear, with 3 to 5 leukocytes and 30 erythrocytes to a high power field, with a trace of albumin. Recent previous study of urine obtained from each kidney revealed no pus, no organisms and negative culture from the right, a few leukocytes, with gram positive cocci on stain and a moderate growth of hemolytic Staphylococcus aureus with white mutations, previously reported "albus" on two occasions, from the left kidney. Radiographic studies of the urinary tract revealed kidney outlines of normal size and position with a large area of increased density over the left renal pelvis and multiple small areas over the upper and lower poles of the left kidney. Excretory urograms revealed good function of both kidneys, with only slight dilatation of the calices of the left kidney. Additional x-ray studies showed normal gallbladder function, negative stomach and colon. Chest fluoroscopy was negative. Stool cultures were negative. Serologic studies were negative. Blood count revealed 5,500,000 red blood cells and 7,000 white blood cells. A hemoglobin of 16.5 Gm. was found.

From Rush Medical College of the University of Illinois and the Presbyterian Hospital.

The blood nonprotein nitrogen was 31 mg. per hundred cubic centimeters, creatinine 1.5 mg. per hundred cubic centimeters and urea nitrogen 11.

At operation the kidney was difficult to free. A longitudinal nephrotomy incision was made over the upper pole, with removal of stones in that calix, while the large pelvic stone and lower pole stones were removed through a mid lower pole incision. X-ray examination of the exposed kidney revealed no stones. The kidney was closed around a soft tube with mattress sutures and a pad of fat fastened over the suture line. Although blood loss on the table was minimal, 1,000 cc. of whole blood was given postoperatively.

The temperature rose to 104 F. the first postoperative day and fluctuated from 101 to 105 F. for the next fourteen days. The patient ate and took all fluids by mouth from the second postoperative day. Throughout his hospital stay his appetite remained almost voracious, requiring heavy feedings supplementary to his regular meals. Sulfadiazine 0.5 Gm. was given every six hours the first four days, then 1 Gm. every four hours the next two days, a total of 20 Gm., when it was discontinued because the urinary output began to fall, dropping to 300 cc. on the eighth postoperative day. A few erythrocytes but no crystals were found in the urine. Blood sulfadiazine levels unfortunately were not done. Positive blood cultures of hemolytic Staphylococcus albus were obtained on the fifth postoperative day; the cultures turned a faint yellow a few days later. Blood nonprotein nitrogen on the tenth postoperative day was 131 mg. per hundred cubic centimeters and the patient was somewhat stuporous. Examination of the chest revealed evidence of a bilateral bronchopneumonia, the signs persisting for almost two weeks. Blood nonprotein nitrogen was 147 mg. per hundred cubic centimeters, creatinine 4.4 per cent on the eleventh postoperative day, when the temperature was 104 F.

Penicillin 200,000 units was given on the thirteenth postoperative day in 1,000 cc. of 5 per cent dextrose in isotonic solution of sodium chloride intravenously. The temperature fell from 104 to 100 F. in twenty-four hours. The first chill occurred on the third day of penicillin after 500,000 units, when a slight subicteric hue was noticed in the scleras. Purpuric spots and many pustules appeared all over the body in uneven distribution, remaining for almost a week. The patient was exceedingly apprehensive. Hemoglobin on the thirteenth postoperative day was 7.5 Gm., erythrocytes were 2,250,000 and leukocytes were 3,000. The urine showed heavy formation of albumin.

Penicillin was then continued by intramuscular and intravenous routes, depending on the patient's tolerance, averaging 150,000 units a day for the next three days; then the dosage on the seventh day of penicillin was increased to 180,000 units a day for two days, when the temperature fell to 99.6 F. From then on the dosage varied from 100,000 to 190,000 units a day. Supportive treatment included digitalis, vitamin C and blood transfusions, of which seven were given in 500 cc. amounts. The temperature first became normal on the thirty-ninth day of penicillin therapy after a total dosage to that point of 5,775,000 units of penicillin.

Although the blood culture became negative on the fifteenth day of penicillin, slight elevation in temperature with pain in the left flank continued at times until the incision was reopened on the eighty-third postoperative day. Several abscess cavities in the left kidney were broken down with the finger and drained. Daily dosage had been averaging about 60,000 units from the thirty-ninth to the forty-sixth day after starting penicillin, when the drug was discontinued (fifty-eighth postoperative day) for several days, then was administered again when fever recurred and continued for a period of fifteen days; meanwhile an aqueous penicillin solution was used for several days to irrigate the nephrostomy wound.

For five days after the renal abscesses were drained 100,000 units a day, administered in hourly doses of 10,000 units dissolved in 1 cc. of cooled isotonic solution of sodium chloride, was given. The penicillin was then discontinued after having been given almost continuously for eighty-one days with a total dosage of 8,355,000 units. The patient was released from the hospital on the one hundred and thirty-fifth postoperative day, with a left renal sinus, which six months postoperatively is practically healed.

### COMMENT

It has been shown by Florey [1] and by Rammelkamp [2] that about 60 per cent of penicillin given intravenously is excreted in the urine within an hour. At the end of this time the concentration of penicillin in the blood is zero. Frequent reinjections are necessary to maintain an adequate blood level of penicillin. For this reason a large proportion of the penicillin this patient received was given in hourly doses by the intramuscular route between intravenous injections. In a recent editorial [3] in THE JOURNAL penicillin excretory blockade was discussed. Simultaneous injection of 5,000 oxford units of penicillin and 30 cc. of diodrast reduced the excretion of penicillin from 60 per cent to 20 per cent in one hour. Another substance with a low toxicity, para-aminohippuric acid, also reduced the urinary output of penicillin and seems to warrant clinical trial. Our patient presented a self blockade in the form of a low renal function as revealed by the elevated blood chemistry and low urinary output at the start of the penicillin therapy. Because of this, more of the penicillin was retained in the blood stream and very possibly aided greatly in sterilizing it.

### CONCLUSIONS

1. Prolonged penicillin therapy with a total dosage of 8,355,000 units undoubtedly prevented a fatal outcome in this instance.
2. Complete recovery did not occur until surgical drainage of the secondary renal abscesses was carried out.
3. Development of a successful method of penicillin blockage should reduce the amount of the drug necessary in a fulminating infection.

104 South Michigan Avenue.

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## SPONTANEOUS PNEUMOTHORAX PRODUCED BY ASCENT IN AN AIRPLANE

LIEUTENANT COMMANDER HAROLD VINCENT HOLTER, MC-V(S), U.S.N.R.
AND
LIEUTENANT ORVILLE HORWITZ, MC-V(S), U.S.N.R.

It is probable that air travel will become more prevalent after the war for persons of all ages and that such persons who may have suffered recent illness are likely to consult their physician before undertaking air travel. We believe that this report of a case of spontaneous pneumothorax in which the precipitating factor was the change of atmospheric pressure produced by ascent to 8,000 feet in an airplane, may influence the advice given to patients in this respect.

### REPORT OF CASE

Pfc. E. A., aged 21, walked into sick bay on Sept. 13, 1944 complaining of pain in the upper right thorax, which had suddenly developed six days previously, while he was flying for the first time in an airplane. (The plane was a Marine "Commando" R5C, which had taken off less than an hour previously, and the altitude of flight was approximately 8,000 feet. Flying conditions were good; the air was smooth. The patient was a passenger sitting on the bucket seats attached to the side of the cargo portion of the plane, which is just behind the pilot's cock pit.) Since that time the pain had persisted. It was aggravated by walking, coughing, deep breathing or any type of increased exercise. The patient had been subject to frequent mild upper respiratory infections for some years, but there was no indication of pneumonia, pleurisy or tuberculosis in the past or family history. An x-ray film of the chest taken in September 1943 was considered negative.

Physical examination revealed a healthy appearing white man of moderate height and weight, not acutely ill but having some respiratory embarrassment. The trachea was deviated slightly to the left. There was hyperresonance and much decreased

1. Florey, H. W.; Abraham, E. P.; Cahin, E.; Fletcher, C. M.; Gardner, A. D.; Heatley, N. G., and Jennings, M. A.: Lancet **2**: 177, 1941.
2. Rammelkamp, C. H., and Keefer, C. S.: J. Clin. Investigation **22**: 425, 1943.
3. Penicillin Excretory Blockade, editorial, J. A. M. A. **126**: 369 (Oct. 7) 1944.

This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the U. S. Navy. The opinions and views set forth in this article are those of the writers and are not to be considered as reflecting the policies of the Navy Department.

breath sounds over the entire right lung area. The heart sounds were normal and the apical impulse was inside the midclavicular line.

X-ray examination of the chest on September 15 revealed about 60 per cent collapse of the right lung, as shown in the accompanying illustration. The patient was hospitalized and treated symptomatically.[1] Subsequent physical and x-ray examinations revealed increased expansion of the lung. On October 14 he was transferred from a forward area back to a U. S. Naval Hospital by means of surface craft with the following note: "Because of the condition described in this marine, who is connected with aviation, it is advisable that this man never fly again because of the danger of recurrence during flight. He is transferred to the U. S. Naval Hospital for further treatment and disposition with the recommendation that, in due time, survey from the service be definitely considered."

COMMENT

In considering the mechanism of this accident, it is probably easier to consider first the precipitating factor which is known than the predisposing factor which is questionable. Under normal conditions the pleural cavity is merely a potential space between the parietal and pulmonary pleura in which an average pressure of about 756 mm. of mercury is maintained. Again under normal conditions the intrapulmonary pressure is kept approximately at the same level. In this case the pressure was rather abruptly dropped to about 560 mm. of mercury or by about 26 per cent, thereby creating a tendency for the lung to collapse partially. As long as the pleural cavity remained potential, this would not have been possible. But with the development of increased tendency to separate the pulmonary from the parietal pleura, a weakness in the pleura was exploited and pneumothorax occurred.

Sixty per cent collapse of right lung.

Another possibility is that a peripheral emphysematous bleb may have ruptured as the result of relative increase of pressure within the bleb itself. As far as the predisposing factors are concerned, evidence seems to point to adhesions or emphysematous blebs rather than to tuberculous infection in a large percentage of cases.[2]

It has lately been reported that patients with traumatic pneumothorax may be transported by air, at low altitudes, without jeopardy. In these cases the only change will be slight increase in the percentage of collapse of the lung, and, since a tear in the pleura already must exist, no further damage should be anticipated. In contrast to these individuals is the one reported in which the tear did not already exist but is merely a potential weakness which may be converted into a full tear by means of decreased atmospheric pressure.

Although no definite conclusion may be drawn from this particular case, it is our considered opinion that extreme caution should be exercised in advising patients who have had known diseases of the pleura about airplane travel.

SUMMARY

In a case of spontaneous pneumothorax the only apparent precipitating factor was the change of altitude due to ascent to 8,000 feet in an airplane.

1. Bailey, H.: Surgery of Modern Warfare, ed. 2, Baltimore, William Wood & Co., 1942, vol. 1, pp. 41-42; vol. 2, p. 967.
2. Cecil, R. L.: Text-Book of Medicine, ed. 6, Philadelphia, W. B. Saunders Company, 1943.

# Council on Physical Medicine

*The Council on Physical Medicine has authorized publication of the following reports.*

*The Council wishes to express its appreciation for the valuable assistance rendered in the preparation of this report by Drs. George M. Coates, Edmund P. Fowler, W. E. Grove, Walter Hughson (deceased), Isaac H. Jones, Dean M. Lierle, Douglas MacFarlan, C. Stewart Nash, Horace Newhart, Paul E. Sabine and Burt R. Shurly.*

HOWARD A. CARTER, *Secretary.*

## MINIMUM REQUIREMENTS FOR ACCEPTABLE AUDIOMETERS

1. A clinical audiometer is an instrument for measuring at prescribed frequencies the auditory threshold of any individual in decibels referred to a standard intensity level known as the "normal threshold of hearing." This is defined as the modal value of the threshold of audibility of a large number of normal ears of persons in the age group from 18 to 30 years. The intensity of the sound produced by an audiometer when the intensity dial is set at zero for any frequency should be that corresponding to the normal threshold of hearing for that frequency. The threshold of hearing of an individual ear is referred to as the normal threshold and is the audiometer setting in decibels corresponding to the faintest tone signal at which the person being tested reports correctly that he hears the test tone at least two thirds of the number of times it is presented to him. In applying these tests the threshold shall be approached twice as often from below as above the threshold.

2. The reference standard for "Normal Ear Threshold" for air borne sound at the specified frequencies for audiometers intended for general diagnostic purposes shall be established and maintained by the National Bureau of Standards. The average sound pressure levels at these frequencies shall be those set up under standardized test procedures by three standard receivers maintained at the National Bureau of Standards when the average voltages shown below are impressed across their terminals:

| Frequency of Test Tone | Voltage Level in Decibels Referred to One Root Mean Square Volt |
|---|---|
| 128 | — 73 |
| 256 | — 88 |
| 512 | — 102 |
| 1,024 | — 109 |
| 2,048 | — 111 |
| 4,096 | — 107 |
| 8,192 | — 75 |

These voltages were determined by comparison with the output of Western Electric 552 receivers of the Western Electric 2A audiometers.

3. *Frequency Range.*—(*a*) An audiometer shall be capable of producing test tones over the frequency range from 128 to at least 8,192 cycles per second. The audiometer may generate discrete frequencies or may produce continuously variable frequencies over the whole or part of this range. In either case frequencies of 128, 256, 512, 1,024, 2,048, 4,096 and 8,192 shall be producible at clearly marked and definite settings of the frequency indicator.

(*b*) The frequency of each of these test tones shall not in any case depart by more than ± 2.5 per cent from the indicated frequency. Dials shall be marked so that frequencies can be easily read.

4. *Purity of Test Tones.*—At 128 cycles the sound pressure level of any single harmonic in the test tones at all intensity settings shall be at least 20 decibels below the sound pressure level of the fundamental, measurement to be made on a closed standard coupler with a volume of approximately 6.0 cu. cm.

At all other frequencies the intensity of any harmonic shall be 25 decibels below that of the fundamental.

5. *Intensity Range and Calibration.*—Audiometers shall be capable of producing test tones of the purity prescribed at the various frequencies and of maximum intensity levels not less than those shown:

| Test Tone Cycles per Second | Intensity Level in Decibels Above Normal Ear Threshold |
|---|---|
| 128 | 60 |
| 256 | 80 |
| 512 | 85 |
| 1,024 | 90 |
| 2,048 | 90 |
| 4,096 | 90 |
| 8,192 | 70 |

(*a*) Intensity levels at the foregoing decibel settings of the audiometer shall not differ from the specified values by more than ± 2.5 decibels.

(*b*) Intensity of test tones shall be variable in steps not greater than 5 decibels, with appropriate dial markings to indicate the respective intensity levels in decibels referred to the normal threshold as zero. The difference in measured intensity levels corresponding to two adjacent settings shall not vary from 5 decibels by more than ± 1.0 decibel for any frequency.

6. Audiometers shall be supplied with bone conduction receivers for measuring the threshold of hearing for bone conducted sound.

(*a*) A suggested procedure for establishing the normal threshold of hearing for bone conducted sound as measured by a particular audiometer is as follows: Determine at each frequency the intensity level, as measured by the intensity setting of the audiometer, which can just be heard by each of 5 normal hearing subjects when the bone conduction receiver is pressed against the mastoid just back of the ear. The average of the five measurements at any frequency is taken as the normal threshold for bone conducted sound of that frequency. This average will be the zero setting of the particular audiometer for bone conducted sound of that frequency. A "normal hearing subject" is defined as a person between the ages of 18 and 30 whose measured threshold of hearing for air borne sounds does not depart from the normal threshold by more than ± 10 decibels at any frequency. All measurements in the foregoing are to be made in a room free from extraneous sound of sufficient intensity to vitiate the measurements. Acceptance tests on this requirement may follow the same procedure.

(*b*) The bone conduction receiver shall be so constructed that it does not produce sound in the air to a degree that will affect the validity of bone conduction measurements. "To test for this requirement, the bone conduction receiver is held close to but not touching the ear. The audiometer setting for minimum audible intensity under this condition should be 10 decibels higher than when the receiver is pressed against the mastoid."

7. *Inherent Noise.*—The noise level due to alternating current hum, commutator ripple or any other cause shall be so low that it is inaudible to a normal hearing person in the presence of the test tone produced at any attenuator setting at any frequency.

8. If the manufacturer supplies with his instrument charts for plotting measured hearing loss, these charts shall comply with the following specifications: The chart is to be ruled with rectangular coordinates, with frequency as the abscissas and "hearing loss in decibels" as the ordinates. Frequencies shall be shown by vertical lines spaced at octave intervals. (For an instrument that produces test tones at intermediate frequencies, vertical lines to correspond to these frequencies should appear at the proper fractional parts of the octave intervals.)

Normal hearing for both air borne and bone conducted sounds shall be indicated by a single horizontal line marked line 0, near the top of the chart. "Hearing loss in decibels" shall be indicated by equally spaced horizontal lines, spaced at 10 decibel intervals and numbered downward from the 0 line. The distance between the octave vertical lines shall be two times the distance between horizontal 10 decibel lines.

9. *Guaranties.*—The manufacturer shall make to the purchaser the following guaranties: (*a*) That any defect other than those due to accident or damage from improper use that may appear within a period of one year from date of purchase will be corrected and the instrument recalibrated at no cost to the purchaser except for transportation charges; replaceable parts which may deteriorate with use, such as vacuum tubes, shall, by agreement, be supplied at reasonable cost.

(*b*) That the maker will provide adequate instructions for the proper care and upkeep of his products and will encourage the purchaser to send his audiometer at reasonable intervals to the factory or to a qualified distributor for check as to performance and needed servicing at a reasonable cost.

10. *Marketing and Advertising.*—Rules of the Council on Physical Medicine shall be adhered to by manufacturers of acceptable audiometers.

## MINIMUM REQUIREMENTS FOR ACCETABLE ELECTRICAL HEARING AIDS

A hearing aid acceptable to the Council on Physical Medicine shall be demonstrably capable of increasing the intensity of sound between 300 and 3,000 cycles by at least 30 decibels. Firms shall meet the following requirements:

1. Hearing aids shall have imprinted on each transmitter and air or bone conduction receiver a model number (type or class) or some equally suitable identification.

2. The manufacturer shall supply with the instrument submitted for acceptance data obtained in his own laboratory or in a recognized independent laboratory to support any specific claims which he may make for his instrument. For example, a claim for controllable frequency characteristics should be substantiated by graphs showing the change in frequency response which can be effected. He shall also supply laboratory data in the form of graphs showing the overall acoustical amplification which the instrument will give over the frequency range from 512 to 4,096 cycles, outlining the method used.

3. The manufacturer shall state the possible voltage combinations and advantages resulting therefrom together with battery drain on A and B batteries at one half, three fourths and full volume settings.

4. A hearing aid may be judged not acceptable on the basis of a high inherent noise level.

5. The manufacturer shall furnish to the Council a copy of its guaranty to the purchaser.

6. There shall accompany each hearing aid clearly written instructions for its use.

7. The manufacturer shall give evidence that adequate facilities for servicing the instrument are available and shall furnish names and addresses of servicing agencies.

8. The manufacturer shall agree to furnish from stock to the Secretary of the Council on Physical Medicine a hearing aid for inspection and test. On the request of the Secretary, the manufacturer shall supply him with an order on any of the authorized agents for an instrument for test. On the completion of tests, the instrument shall be returned complete to the manufacturer.

9. All material used in manufacture shall be of first grade and the workmanship skilfully performed. The assembly of the instrument shall be inspected by the examiner, who shall determine whether or not the workmanship has been skilfully performed.

10. The firm shall be responsible for the ethical merchandising practices, financial dealings and contracts of its agents, sales representatives and service men with the purchasers of the instruments. The standards of merchandising and the acceptability of advertising shall meet requirements of the Council on Physical Medicine.

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SATURDAY, MARCH 3, 1945

## ANTISPASMODIC ACTION OF "HYPOTENSIVE" EXTRACTS ON SMOOTH MUSCLES

The experimental demonstration by Abelous and Bardier in 1909 that urine contains a "hypotensive" substance gave impetus to a search for tissue extracts in treatment of hypertensive and myospastic states. Two products in particular received particular acclaim both here and abroad as effective antispasmodics. The two products, known as depropanex and padutin, are pancreatic extracts free from insulin, histamine and choline. A number of clinical reports emphasize their effectiveness in the treatment of intermittent claudication, ureteral colic, angina pectoris, dysmenorrhea and peripheral arterial disease. The benefits obtained were credited to a supposed antispasmodic action associated with direct relaxation of smooth muscles in the blood vessels, ureter or uterus. These extracts were administered orally or intramuscularly, and intravenous injections were considered capable of harm.

Dreisbach and his associates [1] performed careful laboratory experiments to determine the antispasmodic action, if any, of these extracts on the smooth muscles, subjecting circular muscles of the abdominal aorta, common carotid and femoral arteries, longitudinal muscle of the small intestine, circular muscle of the ureter and strips of bladder fundus in a Locke-Ringer solution to the effect of these drugs. Concentrations of padutin over four hundred times the possible theoretical tissue levels based on clinical dosage were necessary to produce some depression of intestinal ureteral and vascular muscles, but the same effect was produced by the preservative glycerin in this product. The same was true for depropanex and its preservative, phenol, for intestinal and ureteral muscles. Depropanex, independently of the preservative, caused stimulation of arterial and bladder muscles with concentrations twenty to sixty times the theoretical concentration based on the recommended clinical dosage. Lower concentrations were devoid of demonstrable effects. The ineffectiveness of these agents on smooth muscles is in accord with their ineffectiveness intramuscularly and orally on the circulation and with their lack of toxicity in animals, which, however, react definitely to intravenous injection, a method warned against clinically. The authors feel that the local irritating effect of the preservatives may be a possible factor in the clinical benefits derived when these extracts are injected intramuscularly. Their experimental results leave little doubt that these so-called hypotensive extracts are without demonstrable intrinsic therapeutic merit in the dosage and methods of administration recommended. These and similar extracts have not been accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

The results of these investigations are but another demonstration that clinical results, even though apparently beneficial, are not in themselves a definite proof of the effectiveness of the drug employed. The pharmacodynamic effect of a substance can with greater accuracy be demonstrated in properly controlled animal experiments.

1. Dreisbach, Robert H.; Van Winkle, Walton, and Hanzlik, P. J.: Antispasmodic Actions of "Hypotensive" Extracts on Smooth Muscles, Arch. Int. Med. **74**: 424 (Dec.) 1944.

## PENICILLIN-LIKE SUBSTANCES IN HIGHER PLANTS

Demonstrations of strong bactericidal substances in certain fungi have reopened an older field of botanic investigation, search for predictable bactericidal substances in the tissues of higher plants. Several antibiotics were reported by earlier botanists. Thus, Stickl [1] showed that certain alkaloids extracted from the common celandine were bactericidal against both staphylococci and the anthrax bacillus. Jordanoff [2] found that extracts of Capsicum annum would kill several plant pathogens. Valette and Liber [3] showed that convolvulin is bactericidal for pneumococci. Antiseptic properties have also been reported for raw juices of cabbages, turnips and horse radish.[4]

Systematic search for antibacterial plant extractives was first undertaken in 1942 by Osborn [5] of the Sir William Dunn School of Pathology, Oxford University. In this search 2,300 different angiosperms (flowering plants) were tested. Selected portions of each plant were ground up by pestle and mortar with sand in a sufficient amount of distilled water to produce a smooth pulp. The pulp was strained through silk and the resulting filtrate tested against both Staphylococcus aureus and Escherichia coli. To make the tests sterile,

1. Stickl, O.: Ztschr. f. Hyg. u. Infektionskr. **108**: 566, 1928.
2. Jordanoff, M.: Jber. Univ. Sofia, Vet. Med. Facultät **3**: 55, 1927.
3. Valette, G., and Liber, A.: Compt. rend. Soc. de biol. **128**: 362, 1938.
4. Sherman, J. M., and Hodge, H. M.: J. Bact. **31**: 96, 1936.
5. Osborn, E. M.: Brit. J. Exper. Path. **24**: 227, 1943.

filter paper disks about 1 cm. in diameter were dipped into the filtrate and then placed on seeded agar plates. The plates were inoculated at 37 C. for twenty-four hours. The diameter of the zone of complete inhibition of bacterial growth was taken as a rough index of bacteriostatic titer. Inhibition zones 20 mm. in diameter were recorded as 1 plus, 30 mm. in diameter as 2 plus and so on up to a maximum inhibition of 70 mm. in diameter (6 plus).

Out of the 2,300 plant species thus far tested, 134 species gave frankly positive results. Forty-two of these extracts gave 1 plus or 2 plus inhibition with Staphylococcus aureus but were completely inactive against Escherichia coli. Most of the others gave 2 plus to 6 plus inhibitions with both organisms. Among the most interesting were extracts of the seeds of a number of varieties of cabbage, cauliflower, broccoli or kohlrabi, which gave 2 plus inhibition with both the staphylococcus and Escherichia coli. Vegetative parts of the same plants were relatively inactive. The most potent extracts thus far produced have been from numerous species of Ranunculaceae. Seeds of Clematis rectu, for example, give 6 plus reactions with both Escherichia coli and Staphylococcus aureus, an in vitro effect apparently superior to that of commercial penicillin.

In testing a given plant it was found desirable to use portions of all available parts—roots, stem, leaf and reproductive organs. In certain cases the bactericidal substance was found to consist of two components, an inactive precursor located in one part of the plant and an activator in another part. The degree of stability of the active substance during wilting and drying varied greatly. Dried material from some species retains full inhibitory power after being kept for one year, while other plants begin to lose the power of inhibition within two days after picking and give negative results when fully dried. Certain well known drug plants, such as Atropa, Datura and Digitalis, show no bacteriostatic properties. Negative results were also noted with most plants currently recommended by herbalists.

Lucas and Lewis [6] of the State College of Agriculture, Lansing, Mich., have recently confirmed these results. Each plant sample was emulsified in four times its weight of distilled water and then strained through cotton cloth. The resulting filtrate was then tested by the plate method against Staphylococcus aureus, E. coli and two plant pathogens (Phytomonas phaseoli and Phytomonas campestris). Among their most interesting findings were detailed studies of extracts from one of the honeysuckles (Lonicera tartarica). Extract of the roots was highly active against one plant pathogen (Phytomonas phaseoli) and gave 2 plus inhibition of Staphylococcus aureus and 1 plus reaction against E. coli. Extract of the scarlet berries from the same plant was wholly inactive against Staphylococcus aureus but gave 4 plus inhibitions with the two plant pathogens and with E. coli.

Lucas envisages the application of some of these inexpensive plant extracts to problems of plant pathology and food spoilage, particularly to the prevention of certain seed borne plant diseases not yet controllable. The reported success in the treatment of certain plant diseases with penicillin [7] forms the basis for this hope. Tests of toxicity and therapeutic efficiency of these inexpensive penicillin substitutes have not yet been made on laboratory animals.

6. Lucas, E. H., and Lewis, R. W.: Science **100**: 597 (Dec. 29) 1944.

7. Brown, J. G., and Boyle, A. M.: Phytopathology **43**: 760, 1944.

## Current Comment

### MEDICAL HISTORY OF THE WAR

Elsewhere in this issue (page 527) appears an announcement from the Division of Medical Sciences of the National Research Council relative to the proposed medical history of the war. The committee has decided not to proceed with the development of the history originally contemplated, as was described in an article by Dr. John F. Fulton [1] published in *War Medicine*. The original plan called for the publication of a work giving the overall picture of medicine's contribution to the war effort. This would have included volumes on medicine, surgery, pathology, treatment, the work of the civilian agencies, the Office of Civilian Defense, the Public Health Service, the nurses, industrial medicine, dentistry and similar subjects. Recently the Surgeon General of the United States Army decided to withdraw from participation in such a history; an official release pointed out that the Army Medical Department would prepare its own history of the war and that its materials would not be available for any other historical work until after the Army medical history had been published. Since the preparation of an overall medical history of the war without the inclusion of the Army experience would be essentially like playing "Hamlet" without the participation of the melancholy Dane, the action reported in this issue of THE JOURNAL was taken. The complete project has been relinquished. The Bureau of Medicine and Surgery of the Navy and the U. S. Public Health Service will accordingly compile separate histories. The action of the Army Medical Department will no doubt mean that many years will pass before it will be possible to assemble anything resembling a complete picture of the great and coordinated contribution to the war effort made by the medical profession of this country. The decision is the more regrettable since the public is entitled to know what the Army Medical Department, as well as the medical profession at large, has achieved during the war period. Since medicine advances on the basis of recorded experience,

1. Fulton, J. F.: Prospectus of a Medical History of the War of 1941 to 19—, War Med. **2**: 847 (Sept.) 1942.

the War Department by this unfortunate step will seriously hinder the progress of scientific medicine in this country, and it will also deprive the public of something that should be theirs.

## BACTEROIDES INFECTIONS

Bacteroides infections are not rare, as shown by the occurrence of 20 cases at the Massachusetts General Hospital during the four year period 1939-1943.[1] Organisms of the Bacteroides group are common inhabitants of the mucous membranes, particularly the nasopharynx, the gastrointestinal tract and the cervix and vagina. From these sites they may invade the surrounding tissue to produce localized infections. Localized infections may spread to the body cavities and to the blood with metastatic abscesses involving especially the lungs, pleural cavities, liver and large joints. The genus Bacteroides consists of gram negative anaerobic bacilli that do not bear spores. The simple separation of the numerous strains of Bacteroides into two groups has clinical value. The Bacteroides funduliformis group includes gram negative, strictly anaerobic bacilli, pleomorphic in size and shape. The Bacteroides fragilis group comprises small gram negative bacilli regular in size and shape. They are strictly anaerobic. These organisms may be easily overlooked in a routine bacteriologic study. They often require serum or ascitic fluid in the medium to promote growth. The clinical value of the grouping is that the septicemia due to the pleomorphic Bacteroides funduliformis group is more severe, with greater tendency to form metastatic abscesses and a higher mortality rate than is the septicemia due to the Bacteroides fragilis group. Bacteroides septicemias usually follow throat infections, otitis media, surgery or infections of the large bowel and genitourinary tract, or gunshot wounds. Clinically the onset is sudden, with frequent chills and high fever. Jaundice is frequently observed. There is moderate anemia and polymorphonuclear leukocytosis. Pus from local and metastatic abscesses is usually thick greenish yellow, is somewhat foul and contains large numbers of Bacteroides organisms. As in other septicemias arising from focal infections producing metastases, treatment consists in the appropriate surgery and supportive measures. Clinical evidence as to the value of the sulfonamides is not conclusive. Bacteroides meningitis deserves special mention, as it comprised 5 of the 20 cases at the Massachusetts General Hospital. In 4 of these recovery occurred, whereas previously all cases reported in the literature had terminated fatally. In smears of spinal fluid the gram negative bacilli were intracellular or extracellular. They could be mistaken for influenza bacilli. Repeated anaerobic cultures were made and the Bacteroides organisms identified. Early and adequate spinal drainage, repeated lumbar punctures, the use of intravenous fluids and transfusions appeared to be major factors in recovery. In 1 case, however, sulfadiazine caused a prompt improvement each time when administered for three separate episodes of meningitis.

1. Smith, William E., and Ropes, Marian W.: Bacteroides Infections, New England J. Med. **232**: 31 (Jan. 11) 1945.

## RENAL COMPLICATIONS IN SULFONAMIDE THERAPY

Renal complications continue to be reported in sulfonamide therapy in spite of the use of improved forms of the drug. Observations by Prien[1] on 2 cases of sulfathiazole anuria and uremia confirm the opinion of Long and his associates[2] that the sulfonamides can cause a true toxic injury to the kidney tubules independent of any tubular obstruction by sulfonamide crystals. Kidney tissue removed at biopsy (2 cases) and fresh kidney tissue obtained post mortem (1 case) were prepared with special technic to prevent the loss of any crystals. Only focal tubular degeneration was observed microscopically. Crystals or concretions were not seen microscopically or grossly anywhere in the urinary tract in the 1 case examined post mortem. In these 2 cases pathologic and clinical evidence indicated neither that sulfonamide crystals were present and washed out of the kidney before the tissues were taken for study nor that the kidney changes were of a nonspecific nature and due to the disease under treatment. Prien suggests a primary chemotoxic cause for the focal lesions in the kidneys. He considers a low urinary output as the most important factor in the causation of kidney complications, but the relationship between cause and effect is not clear. Recovery in 1 case occurred apparently as a result of polyuria following decapsulation: the biopsy specimen removed at the time of decapsulation, however, showed the involved tubules to be in an almost healed stage. In the mechanism of the obstructive type of sulfonamide anuria two physical conditions are of importance. The slowing of the urine stream where the collecting tubule enters the calix tends to cause the sulfonamide crystals (first formed in the convoluted tubules) to separate out, building up a "delta of crystals" in the calix. The tubules then fill with crystals in a retrograde manner. There were rarely crystals in the collecting tubules or at a higher level unless the terminal portions of these tubules also were filled. The affinity of crystals for one another led to the formation of concretions in stagnant urine with subsequent blocking of the urinary tract.

## ANESTHESIA STUDY COMMISSIONS

On page 514 of this issue appears a paper presented before the Section on Anesthesiology at the Chicago session of the American Medical Association. Following the reading of that paper and at the same session the House of Delegates adopted a resolution urging the formation of anesthesia study commissions within the state, county and other medical societies similar to that described. The need for such study is particularly acute because of the large number of new anesthetic drugs and methods introduced to the profession during recent years and consequently for the more rapid and accurate evaluation of these new anesthetic methods and practices.

1. Prien, E. L.: The Mechanism of Renal Complications in Sulfonamide Therapy, New England J. Med. **232**: 63, 1945.
2. Long, P. H.; Haviland, P. W.; Edwards, Lydia B., and Bliss, Eleanor A.: The Toxic Manifestations of Sulfanilamide and Its Derivatives, J. A. M. A. **115**: 364 (Aug. 3) 1940.

# MEDICINE AND THE WAR

## ARMY

### AIR EVACUATION BY THE AAF

An estimated 700,000 sick and wounded patients of the American and Allied forces have been transported by the Army Air Forces in all theaters of operations since air evacuation became a military necessity in 1942, it was announced by Major Gen. David N. W. Grant, the Air Surgeon. More than 525,000, or 75 per cent, of this total were transported in 1944, with the Ninth and Twelfth Air Forces carrying the larger part of the increased traffic as the result of the offensive in western Europe.

Approximately 57 per cent of the 1944 total has been Army Ground Forces and Army Service Forces personnel, 28 per cent British and other Allies, 5 per cent Navy and Marines, 7 per cent Army Air Forces and 3 per cent prisoners of war and civilians. Thus all arms and services have benefited both in health and in morale by the Air Surgeon's recommendation in 1942 that unarmed cargo airplanes be equipped with removable litter supports and be staffed by flight nurses and enlisted technicians to provide a method for the quick, safe and comfortable evacuation of casualties. The medical risk involved may be observed from the extremely low death rate in flight of 7 per hundred thousand patient trips. This record has been achieved despite the large number of critically wounded evacuated from Burma, France, Italy and the Central Pacific.

The great majority of the total patients have been flown from forward areas to base hospitals in theaters of operations, where Troop Carrier Command aircraft often have been the only practical means for safe and rapid evacuation of casualties on a mass scale. At the same time the number of patients evacuated by the Air Transport Command from the theaters into the United States increased nearly 1,000 per cent. The 1943 total was approximately 3,000 compared to an estimated 30,000 for 1944. ATC air evacuation from ports of debarkation to army general hospitals in the interior increased in similar proportions after the introduction of this method of relieving debarkation hospitals and hospital trains early in 1944.

The first known plan to transport patients by airplane was proposed by Capt. George H. R. Gosman, M. C., Army Medical Corps, and Lieut. A. L. Rhoades, Coast Artillery Corps, in 1910, after they had built an airplane at Fort Barrancas, Fla. Credit for the air evacuation of the first patient in the United States probably belongs, however, to Major Nelson E. Driver, Medical Corps, and Capt. William C. Ocker, Air Service, who in 1918 converted a JN-4 airplane into an airplane ambulance at Gerstner Field, Lake Charles, La.

While light airplanes were used extensively for the transportation of the sick and injured prior to World War II, the first mass air evacuation in American military transport airplanes probably occurred in Java and Burma in March 1942. In Burma, ten C-47s of the Army Air Forces evacuated 1,900 sick and wounded soldiers and civilians from Myitkyina to Dinjan in one ten day period of April 1942. Twenty-four litters were roped in tiers in each airplane, but the greatest number evacuated in any one airplane, counting the ambulatory, was 74.

On the basis of recommendations made in 1940 by the chief of the Medical Division, Office, Chief of the Air Corps (now the Air Surgeon, Hq, AAF), the War Department authorized the Medical Air Ambulance Squadron table of organization on Nov. 19, 1941. The medical personnel, including flight surgeons, flight nurses and enlisted technicians, were activated for the first air ambulance unit at Fort Benning, Georgia, in May 1942. Owing to the shortage of airplanes and the pressing need for transport airplanes capable of mass patient movement, the Air Surgeon then recommended that troop and cargo airplanes be utilized on return trips from the front for the secondary mission of casualty evacuation, thus abandoning the concept of a single purpose air ambulance. In October 1942 the airplane ambulance unit was moved from Fort Benning to Bowman Field, Kentucky, and directed to train medical air evacuation transport squadrons for the care of patients in flight. The training group was subsequently designated as the AAF School of Air Evacuation.

Meanwhile mass air evacuation had become a military necessity in the New Guinea and Solomon Island counteroffensives beginning in August 1942. Flight surgeons were directed to improvise air evacuation service from available medical personnel in tactical units, and this was done with great success. Air evacuation in New Guinea was carried out by the Fifth Air Force and in the Solomons by the South Pacific Combat Air Transport Command comprised of Navy, Marine and Thirteenth Air Force units.

The first two medical air evacuation transport squadrons were activated at Bowman Field in December 1942 and entered service overseas in February 1943, one with the Thirteenth Air Force and the other with the Twelfth Air Force in North Africa. Since that time the AAF School of Air Evacuation, which became the Air Evacuation Section of the AAF School of Aviation Medicine at Randolph Field, Texas, in October 1944, has trained thirty-one squadrons. The number of flight nurses trained totals approximately 1,220, including several hundred who were not placed on, or are no longer on, flying duty. Nurses of the United States Navy and foreign governments have attended the school.

Approximately ten flight nurses have been killed in air evacuation service, seven in aircraft and three in jeep accidents. A comparable number of medical flight technicians have been lost. A large number of AAF air evacuation personnel have been cited for distinguished or meritorious achievement either as individuals or as units.

As an indication of the theater recognition of air evacuation, Major Gen. Paul R. Hawley, chief surgeon of ETO, commended Major Gen. Paul L. Williams, commanding general, Ninth Troop Carrier Command, on Sept. 28, 1944 as follows for a special assignment of airplanes to evacuation:

> I want to thank you personally, and in the name of thousands of wounded American soldiers, for the great help you have given the medical service through this campaign, but particularly during the past ten days. . . .
>
> One week ago there were more than 7,000 wounded American soldiers awaiting evacuation from the First and Third armies. The withdrawal of air lift for airborne operations had thrown the entire load on ground transport, which could not cope with the situation. . . . You [have] saved many lives and prevented an enormous amount of suffering during this emergency.

### 24TH GENERAL HOSPITAL AWARDED FIFTH PLAQUE

The 24th General Hospital, created in New Orleans by Tulane University of Louisiana School of Medicine, was recently awarded the fifth Army Plaque and Clasp for exceptionally meritorious performance of duty in the Italian war theater. According to the citation accompanying the award, "this organization provided superior medical attention to thousands of Fifth Army troops. The 24th General Hospital maintained highest standards of professional treatment despite heavy emergency demands which were made repeatedly. The noteworthy accomplishment of this hospital reflects the high traditions of the Medical Corps of the United States Army." The hospital unit is commanded by Colonel Walter C. Royals, formerly of New Orleans, who graduated from Tulane University of Louisiana School of Medicine in 1917. Most officers of the unit are former faculty members or graduates of Tulane. and the majority of its nurses formerly practiced at either Charity Hospital, New Orleans, or Touro Infirmary in the same city.

## ARMY RETAINS GENERAL MARIETTA

Major Gen. Shelley U. Marietta, who recently reached the statutory retiring age, will be retained by the Army as commanding general of Walter Reed General Hospital, Washington, D. C. When General Marietta was assigned to Walter Reed Hospital in 1939 there were available only 1,200 beds; now there are 3,502. His insistence on the latest modern equipment has made Walter Reed probably the best equipped hospital in the United States, if not in the world. General Marietta graduated from the University of Illinois College of Medicine, Chicago, in 1909. He received a reserve appointment in the Army in 1910, and two years later he was commissioned in the Regular Army and graduated from the Army Medical School, Washington, D. C.

## ARMY NURSES GIVEN COURSES IN ANESTHESIA

A number of nurses with the 280th Station Hospital in France have been taking courses in anesthesia. Lectures and demonstrations have been given by Major Joseph Dusard, Bedford, Ind., of the surgical staff, and 1st Lieut. Bernice Boman, chief nurse of the operating room, which cover every aspect of the subject. Among the topics covered in the course are the use of the various anesthetic preparations and their actions: ether, gas-oxygen, gas-oxygen-ether, sodium pentothal and spinal anesthetics, position of patients on the operating table, preanesthetic care, shock, and the anatomy and physiology of circulation and respiration. Special technics are studied in detail.

## FLIGHT NURSES GRADUATE

Twenty-three officers of the Army Nurse Corps recently graduated as "flight nurses" from the Army Air Forces School of Aviation Medicine, Randolph Field, Texas. The course for flight nurses extends over a period of nine weeks, which is divided into three phases of three weeks each. The first phase is a review of various medical and military subjects required of all medical personnel. The second phase is concerned with material peculiar to air evacuation and the third phase is occupied by actual evacuation flights within the zone of the interior.

## RED CROSS BUTTON

The Red Cross button which was worn by Miss Clara Barton, founder of the American Red Cross, has been conferred by Former President Herbert Hoover on Col. Florence A. Blanchfield, chief of the Army Nurse Corps. The button, which was found among the possessions of the late Mrs. Hoover, was presented to Colonel Blanchfield at a recent meeting of the National Nursing Council in New York, in accordance with Mrs. Hoover's expressed wish and believing that the button should be the property of the head of the Nurse Corps which looks after the wounded and sick in uniform.

## FIRST PHYSICIAN TO REACH LEYTE

Lieut. Herbert Karol, formerly of Chicago, was recently reported to have been the first American physician to arrive on the island of Leyte during the American invasion. He was awarded a citation for caring for the wounded on shipboard during the invasion, during heavy bombing attacks. Dr. Karol graduated from the University of Illinois College of Medicine, Chicago, in 1942 and entered the service Aug. 1, 1943.

## PROMOTIONS IN THE ARMY MEDICAL DEPARTMENT

The following promotions to the rank of brigadier general (temporary) were recently announced by the War Department:

Col. Charles B. Spruit, Carlisle Barracks, Pennsylvania.
Col. William A. Hagins, Oliver, Ga.
Col. Robert C. McDonald, Washington, D. C.

## ARMY AWARDS AND COMMENDATIONS

### Major John A. Growdon

Major John A. Growdon, formerly of Kansas City, Mo., was recently awarded the Bronze Star "for meritorious service in connection with military operations against the enemy as General Surgeon, 3d Auxiliary Surgical Group, from June 7, 1944 to Nov. 21, 1944 in France, Belgium and the Netherlands. Major Growdon performed surgical operations two hours after wading ashore on June 7, 1944 and continued his skilful medical pursuits throughout the entire night despite numerous difficulties. Since his arrival on the continent, Major Growdon has administered his duties in an outstanding manner, thus reflecting credit on himself and the military service." Dr. Growdon graduated from Washington University School of Medicine, St. Louis, in 1935 and entered the service in August 1942.

### Captain John R. Matthew

The Bronze Star was recently awarded to Capt. John R. Matthew, formerly of Knox, Ind., for "meritorious service in connection with military operations against an enemy of the United States, in France, from July 15 to Sept. 17, 1944." A censored report from headquarters in France stated that this was the period when his infantry was engaged constantly with the enemy and that Captain Matthew worked constantly, skilfully ministering to injured soldiers and enabling many men to return to further service. Dr. Matthew graduated from Indiana University School of Medicine, Indianapolis, in 1933 and entered the service May 2, 1942.

### Lieutenant Colonel John V. Belmonte

The Silver Star was recently awarded to Lieut. Col. John V. Belmonte, formerly of Chicago, for performing a successful field operation at night with only a flashlight for illumination. Commander of the American Division's medical battalion, he voluntarily accompanied infantry assault troops in an advance against enemy positions to perform the operation under enemy fire. Dr. Belmonte graduated from Loyola University School of Medicine, Chicago, in 1932 and entered the service March 5, 1941.

### Captain Henry Clay Robertson Jr.

Capt. Henry Clay Robertson Jr., formerly of Charleston, S. C., was recently awarded the Oak Leaf Cluster in Germany for meritorious conduct on the field of battle. It was indicated that this was during action in the Hurtgen Forest early in December. Dr. Robertson had already been awarded the Bronze Star (THE JOURNAL, Feb. 3, 1945, p. 281) in October during the Brittany campaign. He graduated from the Medical College of the State of South Carolina, Charleston, in 1935 and entered the service July 23, 1942.

### Major Patrick H. Hoey

Major Patrick H. Hoey, formerly of Scarsdale, N. Y., was recently awarded the Bronze Star for "meritorious achievement in the performance of outstanding services" at a B-24 Liberator heavy bomber station in England, where he is group flight surgeon. Dr. Hoey graduated from Tufts College Medical School, Boston, in 1935 and entered the service Oct. 15, 1940.

### Colonel Harry G. Armstrong

The Legion of Merit was recently awarded to Col. Harry G. Armstrong, formerly of Washington, D. C., for exceptionally meritorious conduct in the performance of outstanding services from Sept. 8, 1939 to June 20, 1941. Dr. Armstrong graduated from the University of Louisville School of Medicine in 1925 and entered the service Feb. 24, 1930.

### Major Edgar Ross Kyger Jr.

Major Edgar Ross Kyger Jr., formerly of Kansas City, Mo., and now executive officer of a medical unit in Belgium, was recently awarded the Bronze Star for meritorious service. Dr. Kyger graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1936 and entered the service July 1, 1942.

# NAVY

## U. S. S. HIGBEE COMMISSIONED

For the first time in history the U. S. Navy has placed in commission a vessel named in honor of a navy nurse. The ceremony took place at Boston Navy Yard February 1, when the U. S. S. *Higbee* was commissioned. Launched at Bath, Maine, Nov. 12, 1944, the ship was christened in honor of Mrs. Higbee, second superintendent of the U. S. Navy Nurse Corps (1911-1922), one of four women to receive the Navy Cross and the only woman to receive it during her lifetime. The citation for her World War I service reads "for distinguished service in the line of her profession, and unusual and conspicuous devotion to duty as superintendent of the Navy Nurse Corps."

## NEW APPOINTMENT

Capt. Waltman Walters, formerly of the Mayo Clinic, Rochester, Minn., who recently returned from a tour of duty in the South Pacific area, has been appointed chief of surgery for the U. S. Naval Hospital at Philadelphia. Dr. Walters graduated from Rush Medical College, Chicago, in 1920 and entered the service July 1, 1942.

## LIEUTENANT BELTON ALLEN BENNETT JR. MISSING IN ACTION

Lieut. Belton Allen Bennett Jr., formerly of Bethlehem, Pa., has been reported missing in action. Dr. Bennett graduated from the University of Virginia Department of Medicine, Charlottesville, in 1938. He left Bethlehem in September 1943 for active service in the U. S. Naval Reserve and was later assigned to a destroyer.

## NAVY AWARDS AND COMMENDATIONS

### Lieutenant Virgil Duncan Shepard

Lieut. Virgil D. Shepard, formerly of Rochester, Minn., was recently awarded the Silver Star Medal "for conspicuous gallantry and intrepidity as surgeon attached to C Company, Third Medical Battalion, Third Marine Division, during action against enemy Japanese forces in the Solomon Islands area from Nov. 1 to Nov. 26, 1943. Within twenty-four hours after our forces landed on Bougainville Island Lieutenant (then Lieutenant, Junior Grade) Shepard skilfully performed many major surgical operations despite hostile air attacks and a constant barrage of machine gun and mortar fire. Working with brilliant initiative and cool courage throughout numerous hazardous engagements, he ministered untiringly to marine wounded, often forced to operate by lantern light during hours of darkness and on one occasion with shell fragments flying through the hospital tent. Lieutenant Shepard's great personal valor and unswerving devotion to duty inspired his comrades to carry on despite extreme peril, and his outstanding professional ability contributed to the saving of many lives which otherwise might have been lost." Dr. Shepard graduated from the University of Michigan Medical School, Ann Arbor, in 1936 and entered the service Oct. 12, 1942.

### Lieutenant Commander Edward C. Klein Jr.

Lieut. Comdr. Edward Caffron Klein Jr., formerly of East Orange, N. J., was recently awarded the Legion of Merit aboard the flagship of Rear Admiral Daniel Barbey for prolonging the life of a dying Japanese prisoner. Dr. Klein graduated from Columbia University College of Physicians and Surgeons, New York, in 1923 and entered the service July 1, 1944.

# MISCELLANEOUS

## WARTIME GRADUATE MEDICAL MEETINGS

The following subjects and speakers for Wartime Graduate Medical Meetings have just been announced:

### California

U. S. Naval Hospital, Corona, Calif.: Comparison of Protozoal and Bacillary Dysenteries, Dr. John Kessell, March 22.

A. A. F. Regional Hospital, Santa Ana Air Base, Santa Ana, Calif.: Plastic Surgery, Lieut. Comdr. G. H. Gray and Dr. William S. Kiskadden, March 20.

Station Hospital, March Field and Regional Hospital, Camp Haan, Riverside, Calif.: Psychosomatic Medicine, Dr. Henry Douglas Eaton, March 20.

Torney General Hospital, Palm Springs, Calif.: Penicillin: Recent Developments in Surgical and Public Health Antiseptics, Dr. Frederick Moore, March 20.

U. S. Naval Hospital, Long Beach, Calif.: Diabetes, Drs. J. W. Sherrill and Howard F. West, March 17.

U. S. Naval Hospital, Santa Margarita Ranch, Oceanside, Calif.: Blood Plasma and Substitutes: Water Balance, Lieut. Col. R. N. Jones and Major Edward Schwartz, March 8; Thoracic Surgery, Dr. John Jones and Lieut. Comdr. J. E. Dailey, March 22.

Station Hospital, Camp Stoneman, Pittsburg, Calif.: Infectious Diseases, Dr. Henry D. Brainerd, March 10; The Clinical Aspects of Allergy, Dr. Albert H. Rose, March 17.

### Pennsylvania

U. S. Naval Hospital, Philadelphia: Surgical Technic in Acute Appendicitis, Dr. George Muller, March 23.

### Virginia

Station Hospital, Fort Belvoir, Virginia: General Principles of Plastic Surgery, Dr. Robert E. Moran, March 12; Seasonal Hay Fever, Dr. Grafton Tyler Brown, March 26.

### West Virginia

Ashford General Hospital, White Sulphur Springs, W. Va.: Clinic in Orthopedic Surgery, Dr. Custis Lee Hall, March 10.

## NATIONAL RESEARCH COUNCIL'S PROJECTED MEDICAL HISTORY OF THE WAR

The comprehensive Medical History of the War, planned under the auspices of the National Research Council as announced in *War Medicine* for September 1942, cannot now be undertaken. The Office of the Surgeon General of the Army published the following statement in the *Bulletin of the U. S. Army Medical Department* for October 1944: "Although the Surgeon General appreciates very much the unselfish interest and efforts of the many patriotic physicians and scientists in the development of the National Research Council program, he has expressed the opinion that it should be radically revised to eliminate all accounts of Medical Department activities in this war, until such experience has been published in the official (War Department) history."

Since it would be impossible at this time to prepare an adequate, well rounded history without access to army material, the council now proposes to limit its medical history to a record of the activities of the Division of Medical Sciences during the war period. Plans for the division's history have been formulated and are being developed by the subcommittee on historical records acting through the division's committee on information.

The various services and agencies which had expected to participate in the history have been notified of the council's decision, and the majority of them plan to draft their own histories independently.

## U. S. TYPHUS AGENCY ESTABLISHED AT BELGRADE

A U. S. typhus commission has been established at Belgrade at the invitation of Marshal Josip Broz-Tito. The commission will be headed by Brig. Gen. Leo A. Fox, who said that though there was no typhus epidemic in Yugoslavia there was definite incidence, especially in Bosnia.

# ORGANIZATION SECTION

## Council on Medical Service and Public Relations

### REGIONAL CONFERENCES DISCUSS MEDICAL PROBLEMS

A series of regional conferences are being held by the new Council on Medical Service and Public Relations of the American Medical Association. Four of these conferences already have been held in Cincinnati, Washington, Kansas City and Atlanta, with three more scheduled for April on the Pacific Coast and in the other Western states.

Originally these conferences were designed to be fact finding rather than fact giving. They have developed into orientation courses for the attending physicians, state society officers, members of the Board of Trustees who have been present and most of all for the members of the Council themselves. Similar programs have been arranged for each conference, but each meeting has developed its own pattern of pertinent and pointed discussion.

#### CINCINNATI CONFERENCE

At Cincinnati, where the conference was held for the Ohio, Kentucky, Indiana and West Virginia physicians on Oct. 29, 1944, principal interest centered around prepayment medical service plans. This conference, the first formal one to be held by the Council, following an informal meeting for the New England states at Boston, passed a resolution stating:

> There should be advice and help coming from a central location to the state societies and the county societies having to do with their activities and solutions pertaining to medical practice.

This conference was attended by some ninety physicians. Dr. Edward J. McCormick of Toledo, Ohio, vice chairman of the Council, presided, while three members of the Board of Trustees, Dr. James Bloss, Huntington, W. Va., Dr. E. L. Henderson, Louisville, Ky., and Dr. R. L. Sensenich, South Bend, Ind., were present. Among the speakers were Mr. J. W. Holloway Jr., then acting secretary of the Council, who spoke on the activities of the Council and Dr. Joseph S. Lawrence, director of the Washington Office of the Council, who told of his work in Washington. Discussion from the floor was led by Dr. L. Howard Schriver, the president of the Ohio State Medical Association, who spoke of the need for interstate cooperation as a solution for the stream pollution program particularly affecting the states bordering on the Ohio River—Ohio, Indiana and Kentucky. He also talked of the necessity for doctors to be "positive" and not "passive" in their approach to problems of medical economics and education. Dr. R. E. S. Young of Columbus, Ohio, discussed the possible pitfalls of medical service plans. Mr. Charles Nelson, executive secretary of the Ohio State Medical Society, related the action taken by the council of the Ohio State Medical Society recommending the creation of an insurance company to write health insurance on a cash indemnity basis. He explained that this company would be operated by members of the Ohio State Medical Association but would be entirely separate from the association. Dr. N. K. Foster, Hammond, Ind., president of the Indiana State Medical Association, and Dr. O. O. Howard, chairman of the Study Committee on Prepayment Insurance of the Indiana State Medical Association, and Dr. A. M. Mitchell of Terre Haute discussed the action of the house of delegates of that association in regard to the establishment of a prepayment medical service plan in Indiana. Representatives from West Virginia reported that a permissive act was passed several years ago by the West Virginia legislature giving the West Virginia State Medical Society the right to sponsor nonprofit prepayment insurance plans in that state. Insurance plans are being established in accord with the act, and a rapid expansion of the program throughout the state is anticipated.

Dr. Philip E. Blackerby, secretary of the Kentucky State Medical Association, stated that the Kentucky profession is somewhat confused in regard to the problem of health insurance and asks that the Council formulate a basic program to be translated into state programs.

Among those who took part in the discussion were Dr. Walter E. Vest, Huntington, W. Va., editor of the *Journal of the West Virginia State Medical Association;* Dr. Jonathan Foreman, Columbus, Ohio, editor of the *Journal of the Ohio State Medical Association;* Dr. A. A. Brindley, Toledo, Ohio; Dr. Barney J. Hein, Toledo, Ohio; Dr. Cecil Striker, Cincinnati; Dr. John M. Van Dyke, Canton, Ohio; Dr. Robert C. Rothenberg, Cincinnati, chairman of Medical Service Plans, and Dr. J. B. Lukins, Louisville, Ky.

#### WASHINGTON CONFERENCE

Some fifty physicians representing Pennsylvania, New York, Delaware, the District of Columbia, Maryland, New Jersey and Virginia held a session in connection with the regular meeting of the Council in Washington, D. C., on December 6. Following the session newspaper statements prepared by Dr. John H. Fitzgibbon, Portland, Ore., chairman of the Council, and Dr. Louis H. Bauer, Hempstead, N. Y., member of the Board of Trustees and former chairman of the Council, were released emphasizing the following seven point program:

1. Continued expansion of the practice of medicine with full development of approved voluntary hospital, medical, indemnity, industrial and commercial insurance against the costs of medical care.
2. Development of public health facilities for preventive medicine all over the country.
3. Development of adequate diagnostic facilities wherever possible.
4. The use of the voluntary insurance principle in caring for the indigent and medically indigent.
5. The development of hospital facilities where present facilities are used to the utmost and are still inadequate.
6. The use of federal funds to aid communities in public health measures, care of the indigent and construction of necessary hospitals, when local communities are unable to finance the projects, but with retention of local administration.
7. The creation of an agency of the federal government for coordinating and administering medical health functions of the federal government exclusive of the Army and Navy.

The morning session was devoted to explanatory remarks from representatives at A. M. A. Headquarters, among them being Dr. Carl Peterson, Secretary of the Council on Industrial Health, Mr. J. W. Holloway Jr., Director of the Bureau of Legal Medicine and Legislation, and Lieut. Col. H. C. Lueth, Liaison Officer, Procurement and Assignment. In addition to Dr. Fitzgibbon and Dr. Bauer, other Council members who attended the meeting were Dr. Alfred W. Adson, Rochester, Minn.; D. E. J. McCormick, Toledo, Ohio; Dr. James R. McVay, Kansas City, Mo.; Dr. Thomas A. McGoldrick, Brooklyn; Dr. W. S. Leathers, Nashville, Tenn., and Dr. James E. Paullin, Atlanta, Ga.

Prepayment medical insurance plans again were the principal subject of the discussion during the afternoon. Dr. Walter Donaldson, Pittsburgh, presented a statement by the Pennsylvania Medical Society asking that the principles for prepayment medical insurance plans laid down by the American Medical Association specifically endorse service plans as well as cash indemnity or reimbursement plans. Dr. Fitzgibbon stated that it was his understanding that the principles not only included service plans but recommended and encouraged the experimentation and initiation of voluntary prepayment insurance plans by local state and county groups. Louis Reed, United States Public Health Service, gave an analysis on various plans and stated that more and more the plans were merging into combination service-indemnity plans.

#### KANSAS CITY CONFERENCE

Dr. James R. McVay presided at the third meeting, held in Kansas City on December 17, which was attended by representatives of the South Central group of states including Arkansas,

Colorado, Illinois, Kansas, Missouri, Oklahoma and Texas. It was unfortunate that transportation difficulties and conflicting local state medical societies kept representatives from other states in that section from attending this meeting. It is hoped that states which did not attend the conference will be able to attend one of the series of meetings scheduled on the West Coast in April. Talks by representatives of the American Medical Association included a discussion by Dr. F. H. Arestad, who had not spoken at the other conferences. Dr. Arestad told how the Council on Medical Education and Hospitals is integrating its work with the Bureau of Information, which is giving special consideration to the problems that will face medical officers following their release from service in the armed forces. Dr. R. B. Anderson, Fort Worth, Texas, in speaking as a representative of Texas, reminded the group that the "Shoulders plan," which had been given unanimous endorsement by the House of Delegates of the American Medical Association and the American Legion following World War I, should be again brought into light. He told of the provisions of this program to provide locally for veterans rather than nationally. Dr. Anderson urged reconsideration of this plan as an answer to the problem of caring for veterans. Dr. Barrett A. Nelson, Manhattan, Kan., discussed some of the problems Kansas is facing in drawing up a bill for presentation to the Kansas legislature for enactment. Dr. Ira H. Lockwood, Kansas City, president of Surgical Care, Inc., and for many years a member of the Medical Economics Committee of the Missouri State Medical Association, spoke of the principles of Surgical Care, Inc., and how it is working in Missouri.

An abstract of the Atlanta meeting will appear in an early issue of THE JOURNAL.

## Washington Letter

*(From a Special Correspondent)*

Feb. 26, 1945.

### Hill-Burton Hospital Bill Hearings Held

Hearings on the Hill-Burton Hospital Construction bill (S. 191) commenced today under the chairmanship of Senator James E. Murray of Montana, chairman of the Committee on Education and Labor. Following a recommendation made in January by the Pepper Committee on Wartime Health and Education, the bill authorizes a system of federal aid and grants to states or through the states to other public and nonprofit agencies for hospital planning and construction. The sum of $105,000,000 would be allocated among states for the next fiscal year on the basis of population and financial need. Federal contribution would vary from 25 to 75 per cent. An additional $5,000,000 would be distributed among the states for surveys and plans. Witnesses heard today were Dr. Donald C. Smelzer, president, American Hospital Association, Philadelphia; Rev. Alphonse M. Schwitalla, S.J., Catholic Hospital Association, St. Louis; Rev. John G. Martin, president, American Protestant Hospital Association, Newark, N. J.; Dr. Ernst P. Boas, New York. Later witnesses to be heard are, for February 27, Dr. Reginald Atwater, executive secretary, American Public Health Association, New York; Dr. George S. Stephenson, National Commission on Mental Hygiene, New York; Dr. Thomas Parran, Surgeon General, U. S. Public Health Service, and Dr. Martha Eliot, Children's Bureau, U. S. Department of Labor, Washington, D. C.; and, for February 28, Dr. R. L. Sensenich, Board of Trustees, American Medical Association, Chicago; Dr. Victor Johnson, Secretary, Council on Medical Education and Hospitals, American Medical Association; Joseph Fichter, master, Ohio State Grange, Columbus, Ohio, and Dr. A. Rand, Washington, D. C.

### Medical Members of New Research Board for National Security

The medical profession is well represented on the new Research Board for National Security, which will extend into peacetime the wartime research conducted by the temporary Office of Scientific Research and Development. Dr. Vannevar Bush of the Carnegie Institution of Washington, and now director of OSRD, has declined an invitation to become a member of the new committee, stating that he did not wish to appear to dominate the new organization. The committee is formulating programs of scientific research and development to strengthen national security. Its appointment results from a report of the Congressional Committee on Postwar Research and Development, headed by Charles E. Wilson. Chairman of the Research Board for National Security is Dr. Karl T. Compton, president, Massachusetts Institute of Technology, and among the four executive committeemen are Dr. A. R. Dochez, professor of experimental medicine and surgery, College of Columbia University Physicians and Surgeons, and Dr. Roger Adams, head of the chemistry department, University of Illinois. Among members of the research committee are Dr. H. S. Gasser, director, Rockefeller Institute for Medical Research; Dr. A. Baird Hastings, professor of biochemistry, Harvard University; Dr. W. S. Hunter, professor of psychology, Brown University, and chief, Applied Psychology Panel, National Defense Research Committee; Dr. Lewis H. Weed, director, Johns Hopkins University School of Medicine, and chairman, Division of Medical Sciences, National Research Council; Major Gen. Norman T. Kirk, Surgeon General of the Army, and Vice Admiral Ross T. McIntire, chief, Bureau of Medicine and Surgery, U. S. Navy.

### Expansion of Health Facilities Urged for Postwar Period

Great expansion and development of present health facilities and programs is required to meet the health needs of the 15,000,000 returning veterans of this war, according to an interim report on Health Needs of Veterans, announced today by Senator Claude Pepper's Senate Subcommittee on Wartime Health and Education. Further studies will be made on the quality of medical care being provided for American war veterans with a view to making concrete recommendations. "The men and women in the services," said Senator Pepper, "have become accustomed to the best in medical and hospital care, and they will not be satisfied with anything less than the best when they return to civilian life." Continued investigations will be made with the help of medical authorities, veterans' organizations and professional health groups. The interim report was signed by all five members of the subcommittee: James M. Tunnell, Democrat, Delaware; Elbert D. Thomas, Democrat, Utah; Robert M. LaFollette Jr., Progressive, Wisconsin; H. Alexander Smith, Republican, New Jersey, and Chairman Pepper, Florida.

### Physicians of Maryland and of the District of Columbia May Compose Differences

A joint committee of both houses of the Maryland legislature has asked the Maryland Board of Medical Examiners to reconsider its ban on borderline certificates to allow District doctors to practice across the Maryland state line. Dr. George C. Ruhland, health officer of the District of Columbia, and Theodore Wiprud, secretary of the District of Columbia Medical Society, appeared before the legislative committee. Three months ago the Maryland board rescinded a reciprocity agreement under which certificates had been issued Washington and Maryland doctors for the past sixteen years. Since the $1 certificates were discontinued, District doctors wishing to attend patients in Maryland have been forced to obtain a $50 Maryland license and pass the state examination. District officials say a favorable response to their pleas for reissuance of the certificates is expected.

### Four Hundred and Fifty UNRRA Teams Requested by General Eisenhower

General Eisenhower, Supreme Allied Commander, has requested that 450 United Nations Relief and Rehabilitation Administration teams consisting of 10 men each be appointed on a stand-by basis, to be ready for the defeat of Germany. Meantime international organization is proceeding, Director General Herbert H. Lehman announcing the appointment of Rolf Nugent as deputy chief of UNRRA's Yugoslav mission.

Official Washington is studying reports from London of criticism of UNRRA for reported failure to get relief work under way on a larger scale. Chief difficulty has been said to be in lack of understanding between UNRRA and the Army.

# EXPANSION OF MATERNAL AND CHILD HEALTH AND CRIPPLED CHILDREN'S PROGRAMS

***Recommendations Adopted by the Steering Committee on Health Services Advisory to the Children's Bureau, U. S. Department of Labor, Washington, D. C., January 28***

There is ample evidence that urgent need exists for a widespread expansion of local, state and federal programs to assure the accessibility of health and medical services to all mothers and children. Though great progress has been made during the nine years the Social Security Act has been in operation, the coverage of the country with health services for mothers and children is far from complete and the facilities and personnel to provide a high quality of service and care are still very inadequate. Though evident reduction has occurred in infant and maternal mortality and in the incidence of certain diseases, workers familiar with the problem know that the improvement has varied greatly in different areas and that generally it has taken place in direct proportion to the amount and kind of service and facilities made available. It is well known that in many parts of the country mortality and morbidity rates are far greater than the "average." The rejection rates for selective service have high-lighted what has long been known, but to some extent disregarded, namely that a large proportion of the nation's children are not reaching maturity as physically and mentally fit as is consistent with the knowledge and potential resources available in this country. That more than one in every four of our 18 year old boys who come up before Selective Service is rejected as physically or mentally unfit for general military service is indeed shocking.

Many children today do not receive preventive and curative care compatible in amount or in quality with the present day standards of good pediatric service; many mothers do not receive the kind of obstetric care that is recognized as the best. The reasons that mothers and children do not receive this service are that (1) such services and facilities are not distributed widely but are concentrated to a great extent in the larger urban centers, (2) many families are unable to pay for service even when it is available in the community and (3) neither the provision of medical care nor the education of parents on how to use facilities has kept pace with scientific knowledge.

It is essential, therefore, that all necessary services—preventive, diagnostic and curative—be made available to all mothers and children as rapidly as possible. It is equally essential that such services be of high quality and that they be designed to meet the needs of mothers and children as individuals.

Though extensive expansion is not possible during the war period because of lack of personnel, this period can be used for planning for the training of key personnel, for exploring ways and means to make fuller use of existing personnel and resources and to extend and improve services and facilities, and for starting demonstrations of different kinds of services that will serve as "pilot" projects for postwar expansion. This would make it possible for the program to go forward as rapidly as personnel and facilities become available.

As a basis for action it is necessary to gather data on personnel and facilities for health service and medical care for mothers and children, state by state, to bring into focus local needs. Such state reviews of resources and needs can serve both as supporting evidence for national planning and as specific guides to state and local administrative bodies.

To consider ways and means of meeting these needs, the Children's Bureau advisory committees concerned with maternal and child health and crippled children's services met in December 1944 and made full recommendations to the Children's Bureau.

To bring these recommendations together and point them up for specific action, the chairmen of the committees and subcommittees (or their representatives) met as a special Steering Committee on Health Services on January 28 at the Children's Bureau.

The Steering Committee on Health Services urges the Children's Bureau to take the steps necessary to implement these recommendations.

The recommendations are as follows:

1. *Increase in Federal Grants to States for Maternal and Child Health and Crippled Children's Services.*—The Children's Bureau should seek at once through appropriate legislative measures additional federal funds for grants to the states in amounts adequate to carry out the recommendations of the advisory committees on maternal and child health services and on services for crippled children for expansion of the respective programs.

2. *Statewide Coverage.*—Funds for these services should be made available in sufficient amounts to allow progressive expansion of the programs until each state is able to assure the availability of these services to all mothers and children within the state.

The state plans should show the steps that will be taken and the method that will be developed to provide such statewide coverage within a limited period, preferably not more than ten years.

A state plan should provide measures to make known to all communities the availability of health facilities for maternity and child care, including transportation to such facilities when needed.

3. *Expansion of Community Health Services for Mothers and Children.*—Health services, including treatment services, should be made available throughout every state for mothers and infants, and for children of all ages, including those in school and those at work. These health services should include periodic health examinations, provision for medical care when conditions are found that are detrimental to health, growth or development or when children are sick, dental health service and care (including care for the pregnant and nursing mother) and mental health service at all stages of the child's development (and for the mother during the maternity period).

School Health Service: Special emphasis should be placed on the improvement in school health services, including those in academic and vocational high schools. The services of preventive, diagnostic and treatment agencies should be coordinated with programs of health instruction or other services provided by departments of education and welfare. Normal school and in-service education of teachers should include preparation in the recognition of normal growth and development of children, the signs and symptoms of illness, and the conditions governing a healthy and safe school environment.

Special emphasis should be placed on the need for improved diagnostic services among school children and on the organization of facilities for medical care of children with adverse health conditions.

Since rheumatic fever among children of school age is of such great importance, particular attention should be given to the development of appropriate diagnostic services to detect this disease early.

Hospital and Clinic Care for Mothers and Children: Financial provisions should be made without further delay to provide adequate clinic and hospital service to mothers, infants and children as part of the community health service and to assure continuity of care for maternity patients and newborn infants.

The Steering Committee on Health Services is composed of chairmen of standing advisory committees and subcommittees of the Children's Bureau; namely, Advisory Committee on Maternal and Child Health Services and Subcommittee on Maternal Health, Dr. Nicholson J. Eastman of Johns Hopkins University School of Medicine; Subcommittee on Child Health, Dr. Henry F. Helmholz of the Mayo Clinic; Advisory Committee on Services for Crippled Children, Dr. Oscar L. Miller of the North Carolina Orthopedic Hospital; Subcommittee on Rheumatic Fever, Dr. T. Duckett Jones of the House of the Good Samaritan, Boston; Subcommittee on Medical Social Work, Miss Harriet M. Bartlett of Cambridge, Mass.; Advisory Committee on Mental Hygiene, Dr. George S. Stevenson of the National Committee for Mental Hygiene, Inc., and the Committee on Maternal and Child Health of the Association of State and Territorial Health Officers, Dr. Felix J. Underwood, executive officer of the Mississippi State Board of Health. The meeting on January 28 was attended also by Dr. Joseph S. Wall, president, American Academy of Pediatrics; Dr. George M. Wheatley, assistant medical director, Metropolitan Life Insurance Company, New York, and Miss Hazel Corbin, general director, Maternity Center Association, New York, all members of the Children's Bureau Advisory Committee on Maternal and Child Health Services.

Hospital Construction: In the development of plans for hospital construction, special consideration should be given to the need of making adequate provision for maternity beds and for pediatric beds, including those for newborn infants, for children with communicable diseases and for children requiring prolonged sanatorial or convalescent care.

Care of Premature Infants: A greatly expanded program for the care of premature infants, developed as an integral part of the community health program, should be inaugurated to the end that all general, children's and maternity hospitals shall be equipped with modern nurseries under the supervision of qualified pediatricians and pediatric nurses. State health agencies should designate premature birth as a reportable condition of an emergency character, and emergency transportation facilities should be provided when necessary.

Obstetric, Pediatric and Other Consultants: Each state department of health should employ on its staff qualified obstetric and pediatric consultants to supervise health clinic services for mothers and children, to coordinate service in clinics with care in hospitals and so provide for continuity of service, and to serve in an advisory and consultative capacity to local physicians on the care and management of obstetric and pediatric patients. Similarly, consultants in mental health and dental care should be employed for like purposes.

Education in Maternity and Child Care: A continuous nationwide educational program as to what constitutes adequate care during maternity, infancy, early childhood and later childhood (including adolescence) should be carried out. State and local health agencies should develop programs of adult education in health subjects with emphasis on education for parenthood. Education departments should emphasize instruction in maternal and child health in appropriate courses. Suitable printed and other educational materials should be made available to parents at the appropriate time, and the use of similar material in high schools should be incorporated in the curriculum. Special attention should be given to the development of visual aids, such as exhibits, posters and films. It is of utmost importance that the quality of the preventive and treatment services be such as to reinforce and enhance this educational program in maternity and child care.

The Children's Bureau is urged to outline ideal standards for maternity and child care, including care of crippled children, and to publish and distribute these standards widely through national, state and local agencies, official and voluntary. In addition, it is essential that the federal agency should establish minimum requirements on standards of care for services under state programs receiving federal financial aid.

4. *Expansion of Service for Crippled Children.*—Crippled children's services should be extended through provisions for clinic, hospital and other types of care, as indicated, until complete service is made available to the entire nation.

Rheumatic Fever: In view of the fact that rheumatic fever, together with rheumatic heart disease, is the leading cause of death from disease among children of school age, and in view of the recognized need for the extension of services for children with this disease, a rheumatic fever program should be developed in each state. The program should include diagnostic and treatment services and aftercare and should be expanded as rapidly as the availability of personnel and facilities will allow until the service is statewide.

Children with Cerebral Palsy: Special provisions should be made for children with cerebral palsy, with emphasis on its prevention through competent obstetric care. Encouragement should be given to the establishment of special centers for the training of children with cerebral palsy.

Other Physical Handicaps: Diagnostic and treatment services for crippled children should be extended to include children of all ages with other physically handicapping conditions, such as visual and hearing defects or diabetes or other chronic diseases. Special emphasis should be placed on coordination of these services with the school health services and on utilization of the school health service as a case finding source.

5. *Administration of Crippled Children's Program by State Health Departments.*—In view of the fact that the crippled children's program is one primarily involving medical care, it is recommended that all crippled children's programs be administered by state health departments.

The Children's Bureau and the responsible state agencies should continue to work for the elimination of court action in determining children's eligibility for care under the crippled children's program.

6. *Improvement in the Quality of Care.*—A state plan for maternal and child health or crippled children's services should include provision for continuing improvement in the quality of the care given. This implies that full consideration be given to the needs of each patient and that all community resources be mobilized for this purpose. The organization and administration of the services should be sufficiently flexible to meet the range of individual needs.

To assure care of high quality, a state plan should provide for—

(*a*) Qualification standards for administrative and clinical personnel and institutional services.

(*b*) Opportunity for graduate and postgraduate training for all personnel necessary to administer the program or provide care.

(*c*) Sufficient personnel and facilities and adequate remuneration.

(*d*) Consultant service in obstetrics, pediatrics, orthopedics, mental health, dental health and other specialties as required.

(*e*) Use of adequately equipped health centers, hospitals, clinics and laboratories.

(*f*) Use of groups of physicians, individual private practitioners, nurses, social workers, nutritionists and other professional workers for the purpose of effectively coordinating preventive, diagnostic, consultative and curative services.

(*g*) Effective use of community welfare, education and rehabilitation services.

(*h*) Suitable distribution of hospitals, convalescent and other facilities, diagnostic and therapeutic services, and transportation of patients to these services when necessary.

(*i*) A planned relationship between centrally located hospitals with special diagnostic and therapeutic services, local community hospitals, clinics, health centers and practicing physicians.

To assure nationwide care of high quality, the federal agency should—

(*a*) Develop national standards of care and establish minimum requirements.

(*b*) Provide grants-in-aid to the states that will make possible equalization of opportunity for care of high quality.

(*c*) Aid in the training of personnel and in the development of facilities.

7. *Provision for Training Personnel.*—As far as may be found to be necessary, federal funds should be made available to states to provide well trained personnel for carrying out the services under the maternal and child health and crippled children's programs by granting fellowships, scholarships and special stipends for all types of professional personnel to be employed under these programs.

Funds should also be made available to make possible the development of new courses for the training of professional personnel when such courses are found to be necessary. This may involve responsibility in helping to define curriculum content in new areas of service where it is now undefined. Old courses need to be improved and new courses developed to coordinate and integrate training in the fields of clinical medicine and public health.

8. *Expansion of Advisory Services and Investigations by Children's Bureau.*—Personnel should be made available by the Children's Bureau to assist the states in the development of coordinated community programs and the integration of health, welfare and educational services for mothers and children within the states and in the development and proper utilization of advisory committees.

The Children's Bureau should develop a unit on school health, which, in cooperation with the Office of Education and the U. S. Public Health Service, will work with the several state health agencies to carry out the recommendations in this report relating to the school health program. The functions of such a school health unit should also include program planning in cooperation with the U. S. Public Health Service and the Office of Education—such planning to involve assistance to the states in the preparation of school health personnel, improvement of case

finding procedures in the schools and diagnostic services, the development and utilization of community treatment facilities for care of adverse health conditions found in school children, and the study of methods of preventing such conditions.

A consulting psychiatric staff should be established within the Children's Bureau to advise states and communities in planning psychiatric and mental hygiene services for children, to advise the Children's Bureau on the training of personnel for this field, and to cooperate with the staff of the U. S. Public Health Service with respect to those aspects of its mental hygiene activities that concern children.

Appropriations to the Children's Bureau should include adequate funds to enable the bureau to administer effectively the programs of grants to states, to undertake investigations, administrative studies and demonstrations on maternal and child health and crippled children's services, to make reports on such studies and to promote postgraduate training and education in these fields. As circumstances permit, increased effort should be devoted to studying and reporting on programs and methods as developed by the various states in order to stimulate exchange of ideas and experience.

## Medical Legislation

### MEDICAL BILLS IN CONGRESS

*Change in Status.*—H. R. 2277 has been reported to the House of Representatives, proposing to enact a "Nurses' Selective Service Act of 1945." This bill provides that every female residing in the United States who has reached the twentieth anniversary of her birth but who has not reached the forty-fifth anniversary and (1) who has been a registered nurse in any state, territory or possession of the United States or in the District of Columbia or (2) who is a graduate of a school of nursing and eligible to apply for examination for registration as a registered nurse in the jurisdiction in which such school is situated or in which she resides will be made subject to registration and selection for and induction into the land and naval forces of the United States under the Selective Training and Service Act of 1940, as amended.

*Bills Introduced.*—S. 581, introduced by Senator Downey, California, proposes to confer benefits of hospitalization and privileges of soldiers' homes on certain persons who served in a civilian capacity under the jurisdiction of the Quartermaster General during the War with Spain, Philippine Insurrection or the China Relief Expedition. H. R. 2180, introduced, by request, by Representative Herter, Massachusetts, proposes to enact a "Merchant Marine Veterans' Readjustment Act of 1945." This bill follows closely the provisions of the G. I. Bill of Rights and, in addition, authorizes the chairman of the United States Maritime Commission and the United States Public Health Service to provide adequate facilities for the medical, surgical and dental treatment and hospitalization without charge for merchant marine veterans and dependent members of their families. H. R. 2234, introduced by Representative Traynor, Delaware, proposes to provide grants to states, political subdivisions of states and municipalities for developing and maintaining dental health plans consisting of effective measures for dental health education and for the prevention, treatment and control of dental diseases. H. R. 2253, introduced by Representative Priest, Tennessee, proposes to establish in the Veterans' Administration a commissioned service consisting of physicians, surgeons, dietitians, nurses and medical technicians.

### STATE LEGISLATION

#### Maryland

*Bills Introduced.*—S. 306 proposes to enact a separate chiropody practice act and to create a board of chiropody examiners, to be selected by the board of medical examiners, to examine and license applicants for licenses to practice chiropody. H. 310 proposes to enact a separate naturopathic practice act and to create an independent board of naturopathic examiners to examine and license applicants for licenses to practice naturopathy. H. 330 proposes to enact a separate practice act for physical therapy practitioners and to create a board of physical therapy examiners, to be appointed by the governor from a list submitted by the Medical and Chirurgical Faculty of Maryland, to examine and license applicants for licenses to practice physical therapy. Physical therapy is defined to be "the therapeutic use of physical agents other than drugs, the use of physical, chemical and other properties of heat, light, water, electricity, massage, exercise, medical gymnastics, analysis as taught in physical therapy schools, and radiation, exclusive of x-ray radiation or radium treatment. It shall be the duty of all licensed physical therapists to conduct themselves in an ethical manner and to practice in all ways in conjunction and complete cooperation with the licensed medical practitioners of this state."

#### Massachusetts

*Bills Introduced.*—S. 421 proposes to make it unlawful for any hospital supported in whole by the commonwealth or any subdivision thereof to receive medical students in the institution for the purpose of clinical instruction, service and observation unless similar opportunities are made available to students of all legally chartered medical schools in the commonwealth. H. 1150 proposes to prohibit the operation of a convalescent or nursing home without a license from the department of public welfare.

#### Nebraska

*Bill Introduced.*—L. B. 355, to amend the laws relating to chiropractic, proposes to authorize chiropractors to sign death certificates.

#### New Mexico

*Bills Introduced.*—S. 35 proposes to authorize the establishment and operation of four state general hospitals to provide general medical care and treatment for the people of the state. S. 194 proposes to condition the issuance of a license to marry on the presentation by each party to the proposed marriage of a physician's certificate, based on examination and laboratory test, that the party is either not infected with syphilis or, if so infected, is not in a stage of that disease which may become communicable to the marital partner. S. 204, to amend the laws relating to the practice of osteopathy, proposes, among other things, to accord osteopaths the same right as physicians of other schools of medicine with respect to the rendering of medical services under the provisions of public health, welfare and assistance laws. The bill proposes specifically to provide that no plan or program which discriminates against osteopaths shall be approved by any public official.

#### Texas

*Bill Introduced.*—S. 52, to amend the workmen's compensation act, proposes to afford compensation for disabilities arising from stated occupational diseases contracted in the course of employment.

## Official Notes

### DOCTORS LOOK AHEAD

Broadcast on the largest network (one hundred and twenty-three stations) ever made available for a nonprofit health education program, Doctors Look Ahead takes up vital problems of our fighting forces and our people at home. The next three programs will deal with the following topics:

March 3, Nutrition at Home. Speaker, Dr. G. K. Anderson, Secretary of the Council on Foods and Nutrition of the American Medical Association.

March 10. Rheumatic Fever.

March 17. Women at War, in cooperation with the Office of War Information, speaker to be announced.

In view of the paper shortage, no invitations are being issued to listeners to write in. Nevertheless the program is attracting a considerable audience mail, indicating a widespread public interest in the vital topics which are being discussed. The dramatic qualities of the broadcasts are receiving complimentary attention in radio circles.

This program, which began January 6, will continue through June 30 each Saturday at 4 p. m. Eastern War Time (3 p. m. Central War Time, 2 p. m. Mountain War Time and 1 p. m. Pacific War Time).

# Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

## ALABAMA

**Public Health . . . Is Many Things.**—The state department of health has recently published a thirty-six page booklet entitled "Public Health . . . Is Many Things." Brought out under the direction of Dr. Burton F. Austin, Montgomery, state health officer, the booklet is aimed to disseminate information concerning the activities of the state department of health. Included among the discussions are Keeping Water Supplies Safe; The Public Health Nurse Plays an Important Role; Cancer-Control Program is Aimed at an Ancient Enemy; Free Maternity Care for Mrs. G. I. Joe; Building a Stronger State with Better Food; Rabies Research in Alabama; Public Health Makes Gains in War on Venereal Diseases; Malaria, the Plague of the Centuries, is Being Mastered; Medical Science Pulls Fangs of Deadly Tubercle Bacillus; Rat Destruction Holds Key to Endemic Typhus Control; Motion Picture is Enlisted in the Fight on Disease, and Negroes Greatly Complicate State's Health Problems. Other discussions answer average questions in the lay person's mind concerning the bureau of vital statistics, show the state board's activities in releasing health educational material through lectures and other sources, demonstrate the service of the library in obtaining health information and discuss service and efforts carried out in protecting food, drink, and communicable and industrial diseases. The well illustrated booklet depicting the activities of the department is concluded with an analysis of the per capita cost of public health and combined range of figures showing the state's health for certain periods.

## CALIFORNIA

**Service Officers May Treat Civilians in National Parks.**—The San Francisco *News* recently reported that Attorney General Robert W. Kenny ruled that service medical officers not licensed in California may treat civilian visitors in national parks if a civilian doctor is not employed. The opinion was sought by the state board of medical examiners, which questioned whether a navy doctor stationed at Yosemite National Park for the benefit of servicemen that were quartered there could serve civilians.

**Personal.**—Dr. Jacob C. Geiger, director of public health of the city and county of San Francisco, recently received the official medal of the National Order of Merit, "Carlos Manuel de Cespedes." The medal was awarded by Dr. Ramon Grau San Martin, president of Cuba, also a physician.——Dr. Orvall Smiley, resident physician for the Pacific Coast and Electric Company at Big Bend, has been appointed to a similar position with the Folsom State Prison, filling a position that has been vacant for a number of years. Dr. Smiley is taking over work now being done on a part time basis by two private practitioners, Drs. Paul DeWitt Barnes, Loomis, and James F. McAnally, Roseville.——Dr. Alfred C. Dick, medical director of the Consolidated Vultee Aircraft, box 685, La Jolla, has resigned.——Dr. Edith F. Young, San Francisco, is the new health officer of Sonoma County.

## CONNECTICUT

**Charles Bartlett Celebrates Eightieth Birthday.**—Dr. Charles J. Bartlett, emeritus professor of pathology, Yale University School of Medicine, New Haven, and for many years president of the Connecticut Medical Examining Board, recently was guest of honor at a dinner at the New Haven Medical Association given in recognition of his eightieth birthday. Dr. David R. Lyman, Wallingford, was toastmaster at the dinner and speakers included Drs. H. Gildersleeve Jarvis, Hartford, president of the state medical society, Thomas P. Murdock, Meriden, of the state medical examining board, Joseph I. Linde, health officer for the city of New Haven, and Marvin M. Scarbrough, president of the New Haven Medical Association.

**Health and Human Relations.**—Dr. Charles J. Prohaska, Hartford, state supervisor of health and physical education, is the coordinator of a lecture and workshop course in health and human relations which opened at the New Haven State Teachers College, February 8. The first session was devoted to orientation and the second to a lecture by James H. S. Bossard, Ph.D., University of Pennsylvania, Philadelphia, on "Family Background for Social Hygiene." Among others participating in the series are:

Rev. Liston Pope, Ph.D., Divinity School, Yale University, Moral Perspectives on Health and Sex, March 8.
Maurice A. Bigelow, Ph.D., American Social Hygiene Association, New York, Status of Sex Education in the Schools, March 15.
Dr. James S. Plant, Newark, N. J., Growth and Development of the Child, March 22.
Dr. Marion B. Leonard, New Haven, Anatomy and Physiology of Sex, March 29.
Drs. Maurice J. Strauss, New Haven, and Henry P. Talbot, Hartford, Venereal Diseases, April 5.
Charles Edward A. Winslow, Dr.P.H., and Grace Mooney, Ph.D., New Haven, General Aspects of Public Health in Relation to Family Life, April 12.
Frances Roth, Connecticut State War Council, Program of Social Protection in Connecticut, April 19.
Dr. Howard M. Haggard, New Haven, Alcoholism and Its Effect on Family Life, April 26.
Robert Taber, Philadelphia public schools, Role of the School Counselor in Health and Human Relations, May 3.
Dr. James M. Cunningham, Hartford, Family and Mental Health, May 10.
Harvey J. Fuller, Wethersfield High School, and Marjorie Woodlock, Connecticut War Council, Youth Panel, May 17.
Lois J. King, New Haven Teachers College, Approach to Health and Human Relations in Elementary School, May 24.
Lester A. Kirkendall, Ph.D., U. S. Office of Education, Washington, D. C., Teacher Training in Health and Human Relations, May 31.

## ILLINOIS

### Chicago

**Dr. Kretschmer to Address Service for Chronically Ill.**—Dr. Herman L. Kretschmer, President of the American Medical Association, will address the Central Service for the Chronically Ill of the Institute of Medicine of Chicago at the Standard Club, March 6. His subject will be "The Problem of the Chronically Ill Patient." Dr. William F. Petersen, chairman of the administrative committee, will preside at the meeting.

**Personal.**—At the recent annual meeting of the board of governors of the Institute of Medicine of Chicago, a resolution was unanimously adopted commending James C. Leary, science editor of the Chicago *Daily News*, for his valuable reporting of medical affairs, especially for much needed publicity concerning local health conditions and problems, and of grateful appreciation for his interest and cooperation in the activities of the Institute of Medicine of Chicago. Mr. Leary is now preparing to go to the European theater of operations as war correspondent for the *Daily News*.

**Refugee Physician Permitted to Take Examination.**—In a ruling February 13 the appellate court upheld the plea of Dr. Leopold Schutz, a German refugee, to be permitted to take an examination for a license to practice medicine. Specifically, the appellate court affirmed the ruling of Judge John C. Lewe, who issued a writ of mandamus directing the state department of registration and education to permit Dr. Schutz to take the examination. According to the Chicago *Sun* Dr. Schutz, who was born in Germany, stated that he attended four universities, was graduated from the University of Munich in 1913 and was licensed in 1917. In 1938, he said, the Nazis deprived him of his license and confiscated the transcript record of his studies because he is a non-Aryan. In the case of Dr. Schutz the appellate court ruling was unnecessary, it was stated, because after the ruling by Judge Lewe Dr. Schutz had been permitted to take the examination and passed it.

## INDIANA

**Leroy Edwards Named Professor of Pharmacology.**—Leroy D. Edwards, Ph.D., professor of pharmacology, University of Florida, Gainesville, has been appointed professor of pharmacology at the School of Pharmacy at Purdue University, Lafayette, following the vacancy that was created in October 1944 when Curtis H. Waldon, Ph.D., went to the Montana State University, Missoula, to become dean of the School of Pharmacy there.

**Tom Hendricks Joins American Medical Association.**—Mr. Thomas A. Hendricks, since 1924 executive secretary and head of the bureau of publicity of the Indiana State Medical Association, Indianapolis, has joined the staff of the American Medical Association on a part time basis as Secretary of the Council on Medical Service and Public Relations, with headquarters in Chicago. Mr. Hendricks, who served overseas for thirteen months during the first world war, has been managing editor of the state medical journal for the past ten years.

**Writing Among Students.**—Twenty-six students in the Indiana University School of Medicine, Indianapolis, achieved distinction during 1944 in writing medical articles, according to an announcement from the school. Included among the students accredited this recognition for work in writing, which Dr. Willis D. Gatch, dean of the medical school, has declared to be an essential part of the training of physicians, are:

Junior surgery papers.—Melvin A. Block, Evansville; Justin E. Arata, Mishawaka; Geraldine M. Zix, Indianapolis; Morris Green, Indianapolis; Donald L. Trinosky, Indianapolis; Charles G. Smith, Indianapolis; Frederich C. Green, Fort Wayne; Willard A. Scantland, Richmond; Paul M. Dassel, Evansville, and William R. Noe, Indianapolis.

Sophomore bacteriology papers.—Robert C. Bartlett, Bloomington; William C. Robertson, Indianapolis; Paul S. Jarrett, Sharpsville, and William J. Miller, Fort Wayne.

Sophomore history of medicine papers.—Joseph V. Schetgen, New Castle; William G. Bannon, Kokomo; Robert W. Harger, Indianapolis; Floyd B. Coleman, Martinsville, and John Martin Miller, Indianapolis.

Senior medicine papers.—Ben Wilson Jr., Bloomington; Rex L. Huff, South Bend; Carolyn Mann Rawlins, Hammond; Harold R. Tharp, Trafalgar; Norris J. Knoy, Paragon; Robert P. Lloyd, Fort Wayne, and George S. Westfall, Goshen.

Students writing the junior and sophomore papers have received the annual Osterman awards on the basis of selections made by the editorial board of the *Quarterly Bulletin* of the school of medicine.

## KANSAS

**State Meeting Canceled.**—The Kansas Medical Society announces the cancellation of its 1945 meeting, which was scheduled to be held in Wichita, May 16-17.

**New Department of Physical Medicine.**—Dr. Gordon M. Martin, formerly of Rochester, Minn., is director of a recently organized department of physical medicine at the University of Kansas School of Medicine, Kansas City, with the title associate professor. The department holds the same status in the medical school as other departments such as surgery and physiology and offers courses in occupational therapy and physical therapy in addition to regular courses being offered to medical students and nurses. A short lecture course in physical medicine is being offered to senior medical students.

## LOUISIANA

**Symposium on Tuberculosis.**—A symposium on tuberculosis scheduled to be held at the Louisiana State University School of Medicine, New Orleans, April 17-19, has been canceled. It was sponsored by the university, the National Tuberculosis Association, the tuberculosis control division of the U. S. Public Health Service and the Louisiana State Tuberculosis Association.

## MASSACHUSETTS

**Approving Authority Upheld on Accreditation of Middlesex Graduates.**—The superior court of Suffolk County on January 5 upheld the Massachusetts Approving Authority for colleges and medical schools that graduates of Middlesex University could not qualify to take state board examinations to practice medicine. Superior Judge Charles C. Cabot is reported to have said, according to the *Connecticut State Medical Journal*, "My decision is primarily based on a comparison of this school with other medical schools concerning which evidence was produced. These were primarily the medical schools of Boston University, Harvard and Tufts College." He is also reported to have said that Middlesex School did not have "adequate financial backing," that the "quantity of its faculty is not sufficient" and that "the most serious deficiency of all is its almost complete lack of clinical facilities for teaching." The law establishing the Approving Authority was signed by the governor of Massachusetts, James M. Curley, in 1936. An editorial in the *New England Journal of Medicine* reports that a photograph taken at the time he signed the bill shows several members of the Massachusetts Medical Society watching the proceedings, including Dr. Charles E. Mongan, Somerville, then president of the society, and Dr. Stephen Rushmore, Boston, then secretary of the state board of registration in medicine, who automatically became a member of the Approving Authority and who is currently dean of the Middlesex University School of Medicine, Waltham. Soon after its establishment the Approving Authority drew up the seventeen qualifications that a medical school must meet in order to be approved.

## MICHIGAN

**Beaumont Lecture.**—Dr. J. Arnold Bargen, associate professor of medicine, University of Minnesota Graduate School, Minneapolis-Rochester, Minn., gave the twenty-fourth annual Beaumont Lecture of the Wayne County Medical Society at the Detroit Institute of Arts, February 19. His subject was "Modern Concepts of Intestinal Infection."

## NEBRASKA

**Oil Portrait of Dr. Poynter.**—On February 14 an oil portrait of Dr. Charles W. M. Poynter, dean of the University of Nebraska College of Medicine, Omaha, was presented to the university by the C. W. M. Poynter Foundation. On this occasion announcement was made of the Poynter Fellowship in the medical sciences, also sponsored by the foundation. The stipend of the recipient of this fellowship is $1,200 for a period of tenure of ten months, during which time he will be expected to devote his entire time to research under direction of any of the preclinical or preclinical and clinical departments of the college. Applicants should have concluded at least the first two years of medicine and have demonstrated exceptional ability and, in the opinion of the fellowship committee, indicate aptitude for advanced study and investigative work in the medical sciences. The recipient may become a candidate for an advanced degree in the medical sciences under the current rules of the graduate college. Applications for the next academic year are invited. They should be sent to Dr. A. Ross McIntyre, chairman of the fellowship committee, or the secretary of the foundation, John S. Latta, Ph.D. The program accompanying the presentation of the portrait included an address by Col. Edgar V. Allen, M. C., on "The C. W. M. Poynter Foundation." The portrait was presented by Dr. McIntyre and accepted by Chauncey Samuel Boucher, LL.D., Lincoln, chancellor of the university. It was executed by Mr. Edgar Miller, Chicago. The Poynter Foundation was established to honor Dr. Poynter, dean of the medical school since 1929 (THE JOURNAL, Sept. 30, 1944, p. 309).

## NEW YORK

**Wayland Chester Dies.**—Wayland Morgan Chester, Sc.D., professor emeritus of biology, Colgate University, died at Hamilton, February 7, aged 74.

**Gift to Cornell for Nutrition Building.**—Newspapers announced that directors of the Cooperative Grange League Federation Exchange have given $200,000 to Cornell University, Ithaca, toward providing a suitable building for the Cornell School of Nutrition, established in 1941. Leonard A. Maynard, Ph.D., is director of the school.

**Albert Kaiser Named Health Officer of Rochester.**—Dr. Albert D. Kaiser, associate professor of pediatrics, University of Rochester School of Medicine and Dentistry, Rochester, has been appointed health officer of Rochester, succeeding Dr. Arthur M. Johnson, who had reached the retirement age late in 1944 but who was retained in the city service by request. Dr. Johnson has served as health officer since 1932; he will retire March 31. Dr. Kaiser graduated at Harvard Medical School, Boston, in 1913.

### New York City

**Publication Anniversary of Gessner's Bibliography.**—An exhibition of books on medical bibliography through the eighteenth century, arranged in honor of the four hundredth anniversary of the publication of Konrad Gessner's bibliography, is on display in the library of the New York Academy of Medicine through April 1.

**Francis Carter Wood Honored.**—The unveiling of a portrait of Dr. Francis Carter Wood, director of pathologic laboratories and of radiotherapy, St. Luke's Hospital, was a feature of a tea given February 14 at the hospital in recognition of Dr. Wood's completion of fifty years' continuous service as a member of the hospital staff. The portrait was painted by Leonibel Jacobs and was unveiled by Lincoln Cromwell, president of the hospital, where it will be hung permanently. Dr. Wood served his internship at St. Luke's Hospital. He became director of the pathologic laboratories in 1910 and director of radiotherapy in 1921. He is professor emeritus at the Institute of Cancer Research, Columbia University.

## OHIO

**Creation of Tuberculosis Division.**—The Ohio Public Health Council recently approved the establishment of a division of tuberculosis in the state department of health. The project was recommended by the advisory committee on coordination of tuberculosis programs after a two year study. Another recommendation, now in the process of completion, was the conversion of the Ohio State Sanatorium for Incipient Pulmonary Tuberculosis into a hospital for institutionalized mental patients with tuberculosis. The state department of welfare has money, plans and specifications for this project but is awaiting the removal of wartime restrictions. Other recommendations in the report of the two year study urged

the establishment of two new state institutions for the tuberculous and covered state subsidy to local tuberculosis institutions, both of which were embodied in bills introduced in the legislature in January, and urged the creation of diagnostic treatment centers in the state. Another recommendation asked that x-ray equipment be provided for each of the state institutions and that routine chest examinations be made of all employees and patients in such institutions.

## OREGON

**Frederick D. Stricker Resigns as State Health Officer.**—Dr. Frederick D. Stricker has resigned as health officer of Oregon, according to the Portland *Oregonian*. He has been succeeded by Dr. Harold M. Erickson, assistant state health officer. It was stated that the resignation came almost exactly on the twenty-fifth anniversary of Dr. Stricker's original appointment to the position.

## PENNSYLVANIA

**Veterans Loan Fund.**—The Medical Society of the State of Pennsylvania is planning to create a Veterans Loan Fund to meet the costs of books, equipment, change of location or a short graduate course for returning members of the society from military service. The fund will be built up by pledges of county medical societies through their individual membership. The money will be deposited as a central fund by the Medical Society of the State of Pennsylvania. Ninety per cent of the total amount donated by each county medical society will be used only for loans to returning members of such county society on formal application and approval made through and by such county society. After the fund has completed its usefulness, or at the end of three years after the war is ended, whichever shall be the earlier date, the total balance of the 90 per cent and the names of all outstanding debtors with the amounts involved will be returned to the county society to be disposed of in any way it may designate. Ten per cent of the total amount given by each county society will be maintained by the state medical society as a central fund from which deserving members from counties too small to raise an appreciable fund will be helped on application approved by their respective county society. This fund will be kept for an indefinite period to meet catastrophic needs of veterans or their families. The officer who will administer this fund shall be named by the board of trustees of the state medical society. Pledges to the fund were sent by the state society to county societies under date of February 19. The appeal is made to 7,250 "home front" members and concerns the approximate total of 2,600 fellow members now in military service.

### Philadelphia

**Merit Award to Colonel Ravdin.**—Col. Isidor S. Ravdin, M. C., Harrison professor of surgery, University of Pennsylvania School of Medicine, was recently presented with the award of merit of the Alumni Society of the University of Pennsylvania. *Science* reports that Colonel Ravdin holds the Legion of Merit for outstanding service as commander of an army hospital in India which was organized by the university.

**Memorial Gift.**—The Temple University Hospital has received $11,943.44 from the estate of John Edwin Wells, deceased. According to the *Pennsylvania Medical Journal* this money was bequeathed in memory of his wife's father, Dr. Edmund Wales Holmes, who was first surgeon to the Temple University Hospital and served from 1893 to 1903. He was also the first professor of surgery in the Temple University School of Medicine.

## WISCONSIN

**Alumni Research Foundation Denies Accusations of Illegality.**—On February 14 the Wisconsin Alumni Research Foundation filed in the U. S. District Court a reply denying all accusations of illegality and asserting that all actions were designed to safeguard the public interest and preserve legitimate royalty income, newspapers report. The filed reply is an answer to a government suit charging monopoly, price fixing and other violations in connection with the marketing of patented vitamin D products, it was stated. Litigation started about eighteen months ago, when the foundation sued Douglas Laboratories, manufacturing chemists, for patent infringement. The government intervened with a counterclaim against the foundation and last October amended the counterclaim to include seventeen other defendants, naming one individual and ten drug and food companies. Newspapers stated that the case had been scheduled for trial before Judge John Peter Barnes, Chicago, on September 11.

## GENERAL

**National Negro Health Week.**—"A Healthy Family in a Healthy Home" will be the theme of National Negro Health Week, to be observed throughout the country April 1-8. Literature concerning the educational observance may be obtained from the National Negro Health Week Committee, U. S. Public Health Service, Washington 14, D. C.

**Meetings Canceled.**—The Society of American Bacteriologists announces that its annual session, which was to have been held in Detroit, May 22-25, has been canceled. Leland W. Parr, Ph.D., 1335 H Street N.W., Washington 5, D. C., is secretary-treasurer.——All 1945 meetings of the American Pharmaceutical Manufacturers' Association have been canceled, according to an announcement January 18.——The American Psychiatric Association announces that its annual meeting, scheduled to be held in May in Chicago, has been canceled. There was a meeting of the councilors of the association February 26-27 to consider means of taking care of urgent business of the association arising out of the cancellation of the annual session.

**Roy Hoskins Named Salmon Lecturer for 1945.**—Dr. Roy Graham Hoskins, research associate in physiology, Harvard Medical School, and director of research of the Memorial Foundation for Neuro-Endocrine Research, Boston, has been selected as the Salmon Memorial Lecturer for 1945, according to the Salmon Committee on Psychiatry and Mental Hygiene, 200 Retreat Avenue, Hartford 2, Conn. "The Biology of Schizophrenia" will be the theme of the Salmon Lecture series to be given at the New York Academy of Medicine, 2 East 103d Street, New York, on three successive Friday evenings, November 2, 9 and 16 at 8:30 p. m. The title of Dr. Hoskins' first lecture will be "Nature of Schizophrenia," the second "Manifestations of Schizophrenia" and the third "Treatment of Schizophrenia and Needs for the Future."

**Dr. Spain Retires as Secretary of Allergy Group.**—Dr. William Cook Spain, New York, has resigned as secretary of the American Academy of Allergy and has been succeeded by Dr. Karl D. Figley, Toledo, Ohio. Dr. Spain served as secretary of the Association for the Study of Asthma and Allied Conditions for some twenty years, becoming secretary to the American Academy of Allergy, formed by a merger in 1943. In this year Dr. Spain announced that the money which had been allotted to him as secretary of the Association for the Study of Asthma and Allied Conditions, a parent body of the new group, had been assembled into a fund to form an annual Secretary's Prize. The first recipient of this prize was recently announced as Dr. J. Harvey Black, Dallas, Texas, who was chosen for his paper entitled "The Treatment of Urticaria with Synthetic Vitamin K," read at the first meeting of the American Academy of Allergy in New York, Dec. 11, 1944.

**Putting the Disabled Veteran Back to Work.**—The Industrial Hygiene Foundation of America, Pittsburgh, brought out in January bulletin 3 in a special series entitled "Putting the Disabled Veteran Back to Work." It is published as part II of a panel started at its annual meeting in 1943 and part I of the proceedings of the 1944 annual session. During the year following the 1943 session members of a panel have answered inquiries from industry on procedures for successful job placement of veterans, have examined proposed company plans for reemployment of ex-servicemen and have otherwise provided information and assistance to member companies and industry generally. Members of the panel are:

Dr. Clarence D. Selby, Detroit, medical consultant, General Motors Corporation, chairman.
Col. John N. Andrews, officer in charge of postwar activities, National Selective Service System.
Dr. Harley L. Krieger, Dearborn, Mich., medical director, Ford Motor Company.
A. A. Hendrix, Linden, N. J., personnel director, Eastern Aircraft Division, General Motors Corporation.
I. Dent Jenkins, personnel manager, Harrison Radiator Division, General Motors Corporation.
Dr. Benjamin F. Streets, Sutersville, Pa., medical department, Westinghouse Electric and Manufacturing Company.

**Annual Report of Infantile Paralysis Foundation.**—A total of $1,828,859 was authorized by the National Foundation for Infantile Paralysis to be expended in grants and appropriations between Sept. 30, 1943 and May 31, 1944 for research, education and the training of physical therapists, according to a report released February 23. The report covers only an eight month period because of a change in the fiscal year, and future annual reports will cover operations from June 1 to May 31. The report contains the information that a special fund of two million dollars for epidemic aid and other emergencies has been established by the trustees, as of May 31, 1944, and that last summer's epidemic, the second worst outbreak of poliomyelitis in the history of the United States,

drew on the newly created fund to the extent of $739,860 for use to supplement chapter funds in local communities hard hit by the outbreak. This expenditure, between June 1 and Oct. 31, 1944, while outside the fiscal period covered by the annual report, is mentioned in it as demonstrating the necessity for the establishment of a special fund "for such unforeseen epidemics and other emergencies." During the eight months covered by the fiscal report the national headquarters received $5,191,148 as its share of the 1944 March of Dimes appeal, an additional $5,293,232 remaining with the National Foundation's county chapters. Receipts from other sources, including $240,000 donated by the producer of the motion picture Forever and a Day, increased the total income of the foundation for the fiscal period to $5,452,593. The report discusses the extensive investigations and research carried on throughout the country in universities and other institutions through grants as well as certain projects conducted in the field during the 1943 outbreak. The report points out that in seeking improved methods of treatment of the disease it has been necessary to study other diseases and develop knowledge in many related fields.

**Court Forbids Post Office to Bar Consumers Union Report on Contraceptive Materials from Mails.**—A permanent injunction barring the Postmaster General from interfering with the mailing of the Consumers Union "Report on Contraceptive Materials" has been issued by Judge T. Alan Goldsborough of the U. S. District Court in Washington, it was announced February 16 by Osmond K. Fraenkel, attorney for Consumers' Union. The court's action came after the U. S. Court of Appeals for the District of Columbia reversed the earlier decision of Judge Goldsborough in which he upheld the right of the Postmaster General to bar the report from the mails. The Postmaster General failed to appeal to the Supreme Court for a review of the case and did not offer any further defense before the district court, Mr. Fraenkel stated. The report, which rates contraceptive materials by brand name on the basis of reliability and safety, was prepared by clinical and laboratory workers in the field and was first published by Consumers Union in 1937. It was sold only to those members of the organization who certified that they were married and used contraceptive materials on the advice of a physician, according to Mr. Fraenkel. The Post Office barred the 1941 revision of the report from the mails on the basis of a seventy year old statute forbidding the mailing of obscene materials, including contraceptive information. Consumers Union officials asked for recall of the ban on the ground that the law was not intended to apply to sound medical advice, such as the report gives. The Postmaster General refused to lift the ban, Mr. Fraenkel said, and Consumers Union applied to the courts for aid. The case was first heard by Judge Goldsborough, who ruled against Consumers Union in January 1944 on the ground that the statute was intended to apply literally. The Appeals Court, in overruling this decision, found that: ". . . Congress did not intend to exclude from the mails properly prepared information intended for properly qualified people. In our opinion, the material of the present case was prepared in the manner indicated and was proper in character."

**Photographs of Physicians.**—The Dr. Carl E. Black Collection of photographs of physicians, which was presented last year to the Illinois State Medical Society and which contained more than three thousand photographs, is now being augmented by the addition of hundreds of new photographs taken by Mr. Joseph Merante Jr., 475 Fifth Avenue, New York. The photographing of all members of the Illinois State Medical Society has been a feature of Mr. Merante's work for the past year, these photographs to be included in the Dr. Black Collection which will occupy space in the centennial building, Springfield, Ill., under the care of the Illinois State Historical Society. Among groups currently compiling photographic libraries through the work of Mr. Merante are the Medical Society of New Jersey, the Mississippi Valley Medical Society and the New York State Society of Pathologists. A result thus far of the project in Illinois is the completion of photographic libraries for the faculties of medicine of the University of Illinois and Chicago and Presbyterian and St. Luke's hospitals, all of Chicago. Aiming toward the ultimate collection of a complete library of the photographs of all physicians, to be included in the Carl Black group, Mr. Merante will eventually travel throughout the country to carry out the work. In conjunction with this activity Mr. Merante has been authorized to secure in the course of his travels photographs of representatives of American medicine who are at a distance from the American Medical Association, Chicago. He has already completed satisfactory portraits of the Board of Trustees and Officers of the American Medical Association. The collection will be assembled in the historical material for the Centennial celebration of the American Medical Association in 1947. At the recent Annual Conference of State Secretaries and Editors in Chicago, photographs were taken of those in attendance, which totaled more than half of the total of the national group. The Carl E. Black Collection is said to be the largest single collection in the country except for that in the Office of the Surgeon General of the U. S. Army. It was started as a hobby by Dr. Carl Black, Jacksonville, president of the Illinois State Medical Society in 1904, and carried on for many years alone. It is now registered in the state museum at Springfield as the Carl E. Black-Illinois State Medical Society Collection (THE JOURNAL, April 29, 1944, p. 1308). Photographs taken by Mr. Merante are given to the state medical society to be mounted and added to the group to be placed in Springfield. In addition to showing the complete membership of the Illinois State Medical Society, the collection will ultimately represent a national library of physicians' photographs.

## LATIN AMERICA

**Health Activities in Latin America.**—*Winthrop Inaugurates Research on Tropical Diseases.*—Dr. Felix Martí Ibañez, medical director of the Winthrop Products, Inc., New York, is supervising a newly created medical research program on tropical diseases common to South American countries. Cooperating in the research are San Marcos University, Lima, Peru, oldest college in the Western Hemisphere, the School of Medicine, Santiago de Chile, and the more important hospitals in Antiochia and Medellin, Colombia. Dr. Angel de la Garza Brito, Mexico, medical director of Laboratorios Winthrop, Mexican subsidiary of Winthrop Products, Inc., is supervising the studies being carried on in Mexico, which has the support of the School of Tropical Medicine, Mexico City. Special emphasis is now being given in Mexico to the treatment of malaria.

*Medical Test for Argentine Citizens.*—A new government decree requiring periodic medical examination for all Argentinians was announced by the Argentine government on December 3, it is reported.

*Penicillin Project.*—According to *Science*, Dr. Jesuino Albuquerque, secretary of public health of the federal district of Rio de Janeiro, Brazil, is visiting the United States in order to collect data for the establishment of a municipal penicillin laboratory in Rio de Janeiro. In cooperation with the staff of Wyeth Incorporated, Philadelphia, arrangements have been made for a group of Brazilian chemists and bacteriologists to study the production and standardization of penicillin. Facilities at the Philadelphia, West Chester and Kimberton laboratories have been made available for this purpose.

*Cancer Congress.*—The second National Cancer Congress will be held in Havana, May 5-21. Additional information may be obtained from Dr. Hugh S. Cumming, director of the Pan American Sanitary Bureau, Washington, D. C.

*Expenditures in Cooperative Medical Projects.*—Cooperative medical projects set up since March 1941 in eighteen of the twenty South American countries, involving an expenditure of $100,000,000, are contributing to "vast improvements in business and agriculture" which may be expected in the "very near future," Major General George C. Dunham, director of the Institute of Inter-American Affairs, told members of the American Foundation for Tropical Medicine at their annual meeting at the University Club, New York, February 5. Of the total so far spent $65,000,000 was contributed by the United States and the remainder by the different participating countries. The two not cooperating are Cuba and Argentina. Approximately seven hundred medical projects are currently in operation, including work in both curative and preventive medicine. General Dunham cited particularly work being accomplished in Peru, Bolivia, Paraguay and Brazil. He said that total expenditures in Brazil had reached $15,000,000 with both governments, Brazil and the United States, sharing the cost equally. Noteworthy was the work in malaria control.

*Special Society Elections.*—Newly elected officers of the Sociedad Cubana de Dermatologia y Sifilografia include Drs. Manuel Alonso Pérez, president; Fernando Trespalacios Gómez, vice president, and Guillermo González Peris, secretary.——New officers of the Sociedad de Estudios Clinicos de la Habana include Drs. Julio F. Schutte Visiedo, president; Jose Lastra Camps, vice president; Francisco Canosa Lorenzo, secretary; Luis Rodriguez Baz Alfonso, vice secretary; Luis Ortega Verdes, treasurer, and Alvaro Silva Lopez del Rincon, vice treasurer.

# Foreign Letters

## LONDON

*(From Our Regular Correspondent)*

Feb. 3, 1945.

### Government Grants to Medical Schools to Depend on the Admission of Women and the Reform of Medical Education

In the House of Commons Mr. Willink, minister of health, stated that the Interdepartmental Committee on Medical Schools has recommended a comprehensive program for the reform and development of medical education and research. Recognizing the fundamental importance of these to the future of the country's health services, the government has accepted the principle of increased grants to be distributed by the University Grants Committee to medical schools, postgraduate schools and institutes and hospitals used for teaching and research. The government shares the views expressed in the report on the importance of affording to women opportunities equal to those enjoyed by men for medical training and for obtaining postgraduate experience. It has therefore adopted the recommendation of the committee that future payments of grants to medical schools should be conditional on the school admitting a reasonable proportion of students of both sexes. But it recognizes that schools at present open to only one sex may require periods of varying lengths to adjust their arrangements to a coeducational basis. It proposes that the University Grants Committee in consultation with the university authorities concerned shall be charged with the responsibility of determining from time to time whether the action taken by a school is reasonable. The government attaches equal importance to the revision of the medical curriculum, and increased grants depend on the early completion of this process.

### The Centenary of the Birth of the Father of Tropical Medicine

The centenary of the birth of Sir Patrick Manson, "the father of tropical medicine," was celebrated by the Royal Society of Tropical Medicine. Manson's famous diary, in which he recorded his main discoveries from 1873 on, was displayed. Portraits of him at various stages of his career and his drawings of the development of the filarias in the mosquito were shown. Sir Philip Manson-Bahr, his son-in-law, gave an interesting account of his career. In 1866 he went to Formosa, where he was port medical officer for four years and learned the language of the head hunters of the interior. After spending some years at Amoy, a treaty port on the mainland, he returned to Scotland in 1875. Stirred by Lewis's work on filarias in Calcutta he began to work with the microscope and discovered their nocturnal periodicity. In 1878 he demonstrated the life history of the filarias in the mosquito. Then his study of parasites progressed rapidly. He found Paragonimus westermanii in the sputum of a Chinese mandarin and discovered the part played by Melania libertina. In 1883 he was appointed dean of the Hong Kong Medical School. Among his first pupils was Dr. Sun-Yat-Sen, the revolutionary whose life Manson and Cantlie saved when he was kidnaped in London by the Chinese embassy. In 1891 he formed the nucleus of what became the London School of Tropical Medicine. In 1894, arguing by analogy from what he had observed in filarias, he formulated his mosquito-malaria theory, which Ronald Ross, then a major in the Indian medical service, proved. In an experiment designed to convince the British government, Manson infected his eldest son, then a medical student, with benign tertian malaria through the medium of anopheles mosquitoes.

### Additions to the British Pharmacopeia

The last edition of the British Pharmacopeia was published in 1932, and six addenda have followed. A seventh addendum is to be published in February. In addition to amendments to existing monographs, there will be new ones on amethocaine hydrochloride, amphetamine and its sulfate, aqueous ointments of ammoniated mercury and zinc oxide, cycloprane, dextrose hydrate, injection of protamine insulin with zinc, estradiol monobenzoate, estrone, phenobarbitone soluble, potassium sulfate, progesterone soluble, solution of sodium acetate (anticoagulant or with dextrose), sulfacetamide (and soluble), sulfadiazine (and soluble), sulfaguanidine, sulfapyridine (and soluble), sulfathiazole (and soluble), theophylline with ethylenediamine and thiopentone soluble. There will also be a general monograph on the production of tablets, with standards of weight and a disintegration test.

### Remarkable Results of Forward Surgery in the Invasion of France

The *Army Medical Department Bulletin* states that it is an attractive proposition to bring the military surgeon forward to the patient so as to give early treatment but it is not nearly so simple to accomplish. Much foresight and organization are necessary. Two or more surgical units must be grouped and linked with transfusion units, and there must be good arrangements for nursing and postoperative care. The success of the arrangements in the British army can now be judged from the figures of twenty-one army group records for June to August 1944 during the invasion of France; they refer only to results in forward surgical units. The recovery rate in 1,592 penetrating abdominal wounds was 68 per cent, in 197 nonpenetrating abdominal wounds 90 per cent, in 127 acute conditions of the abdomen 98 per cent, in 292 thoracoabdominal wounds 46 per cent, in 686 penetrating or perforating chest wounds 85 per cent, in 198 amputations of the arm 95 per cent, in 474 amputations of the leg 86 per cent, in 644 compound fractures of the femur 94 per cent, in 240 penetrating wounds of the knee joint 98 per cent, in 122 severe burns 89 per cent, in 122 cases of gas gangrene 72 per cent, in 297 penetrating headwounds 79 per cent, in 50 fractures of the spine and cord injuries 74 per cent and in 887 maxillofacial wounds 97 per cent.

These figures represent the immediate death rate up to the time when evacuation was considered possible. It is not yet known how many deaths occurred later, but in one series of 50,000 casualties treated at base hospitals the mortality was only 0.4 per cent. The term "nonpenetrating abdominal wounds" covers cases of laparotomy without discovery of an intraperitoneal lesion, although there might be extraperitoneal damage with or without free fluid or blood in the peritoneal cavity; it does not include wounds involving only the abdominal wall. These impressive results are the outcome of devoted, skilful and enthusiastic work.

### Diet in Britain and in America Contrasted

The second report on food consumption levels in Britain, the United States and Canada has been prepared by the government. It shows that, in spite of the expansion of military needs and large shipments to the allies, United States and Canadian supplies have been maintained or increased in 1944 as compared with 1943 because of increased production. Food supplies for civilians in Britain showed some improvement on 1943 but continued below the prewar levels for many foods and below the levels in the United States and Canada for dairy products, meat, eggs, sugar and fruit. In both the United States and Canada meat consumption in 1944 was nearly 50 pounds per head more than in Britain. But to compensate for the shortage of these foods the consumption of potatoes and flour was increased and the British now eat substantially more of these

foods than are eaten in the United States and Canada. The minister of food, Colonel Llwellyn, stated at a conference that the inquiry had been most valuable. The main conclusions were that in all three countries food supplies had been maintained and, in some respects, increased compared with 1943.

## PALESTINE

*(From a Regular Correspondent)*

JERUSALEM, Jan. 15, 1945.

### Conference of Otorhinolaryngologists

The third conference of Jewish Otorhinolaryngologists in Palestine took place in Jerusalem in September 1944. The agenda contained discussions on allergy of the respiratory tract and its therapy. A specially interesting contribution was the paper read by G. Wittenberg of Hebrew University dealing with the cause of "halzoun." He said that halzoun is the name given in the Near East to a specific laryngopharyngitis caused by worms. Two kinds of worms have hitherto been considered as producing this condition: (1) leeches of the species Limnatis nilotica, which reach the mouth on drinking of contaminated water, and (2) young specimens of a trematode, Fasciola hepatica. The latter is a common parasite of the liver in cattle and has a complicated life history in which a water snail is involved as an intermediate host. Infection normally occurs through swallowing microscopic encysted cercariae (metacercariae), which develop in the snail and abound in the water of pools and lakes in which the snails live. The Lebanese investigator Khuri propounded the view that in man in the course of eating insufficiently cooked infected lamb liver the parasite is released and attaches itself to the mouth or adjacent cavities. Khuri attributed to this parasite various disorders and sometimes even death by asphyxiation. Khuri's explanation appears to be doubtful, since it contradicts the normal course of the life history of Fasciola hepatica. An additional explanation is suggested by a case of Drs. Marshak and Gorshiev in Tiberias, who extracted an unknown worm from the throat of a patient. This worm proved to be the trematode Clinostomum complanatum, a common parasite of fish-eating birds. The birds infect themselves by eating fish which contains encapsulated larvae of the parasite. The case reported is the second on record in man, the other one having been described in Japan. It is suggested that many cases of undetermined "halzoun" might well have been produced in this way by Clinostomum.

### Diseases Among Immigrants

Jewish Palestine is confronted with a new medical problem consisting in the treatment and medical supervision of new immigrants. J. Meyer opened the discussion on the subject by viewing the fate of the future settlers from a preventive-medical point of view. While in prewar time a selection of the immigrants was possible, Palestinean Jewry is now moved only by the wish to save as many people as possible from European countries, thus imposing on the medical profession of this country the task of coping with a number of new medical problems. The "Children from Yemen," for example, presented a high percentage of trachoma, while the group of "Teheran Children" was especially characterized by their great number of skin diseases. Among 2,150 young immigrants who arrived recently 30 had tuberculosis in comparison to 5 cases among 8,000 earlier young immigrants. Increase of the number of hospital beds and a center for preventive medicine were pointed out as an urgent need. The last mentioned problem was particularly stressed by Gruschka. An organized medical service should preeminently be concerned with early diagnosis and timely institution of therapy, the supervision of particularly exposed groups and the after-treatment of diseases. From a scientific point of view as well as with the object of better cooperation of all participating factors, the hospital should have a central and governing position within this framework of a medical service.

## SWITZERLAND

*(From Our Regular Correspondent)*

GENEVA, Jan. 26, 1945.

### Swiss Doctors Do Not Want to Become Civil Servants

In a meeting recently held in Berne, representatives of the Medical Association of each "canton" and of the Central Committee of the Swiss Medical Federation discussed propositions coming from certain circles with a view to organizing the medical profession on a civil service basis. A resolution, unanimously adopted by the meeting, expressed the willingness of all doctors to collaborate loyally in the establishment of a true social insurance system. But the delegates remained persuaded that the suppression of an independent medical body, replaced by medical civil servants with a fixed salary, would mean a leveling of all medical activities and would not prove to be of interest for the patient in the long run. All Swiss doctors are therefore strongly opposed to any attempt to make the medical profession a state organization.

### Swiss Medical Aid to Ex-Occupied Countries

Two public health missions have gone to give medical help to Marshal Tito's soldiers in Yugoslavia. They are led by Dr. G. Piderman and by Professor Moser of Zurich and have taken with them medical supplies to the value of 75,000 Swiss francs, surgical apparatus and insecticides. The first reports say that there are absolutely no sanitary facilities in ex-occupied parts of Yugoslavia and that the food situation is frightful. A similar but larger mission is about to start for France with Dr. Henri Tecoz of Lausanne at its head. Dr. Tecoz, who is a fellow of the Royal Society of Medicine, worked in France during the first world war, when he was honored with the Legion of Honor and the Epidemics Medal.

### The DDT Substances, a Great Swiss Discovery

Resuming studies began in 1874 by O. Zeidler, three Swiss chemists, Drs. Läuger, Martin and Muller, have been able to obtain by synthesis dichlor-diphenyl-trichlormethyl-methane (DDT), a remarkable insecticide which has now been utilized by Allied forces and people of ex-occupied territories in fighting malaria, exanthematic typhus and every insect pest.

### A Swiss Tropical Institute

Recently created in Basel, the Tropical Institute has now taken possession of its premises in a fully equipped building. The institute aims at pursuing all scientific studies pertaining to the tropics and at giving practical and special training to Swiss or foreign people who want to go to the colonies.

### Penicillin in Switzerland

A small quantity of penicillin has just arrived in Switzerland, where it has been distributed among the ten biggest university clinics. Experiments are in process to study the therapeutic activity of the substance in all infectious diseases.

## Marriages

GEORGE WASHINGTON FREEMAN SINGLETON to Miss Minnie Elizabeth Johnson, both of Selma, Ala., November 16.

CHARLES OLIVER HUMPHRIES, Asheville, N. C., to Miss Josephine Henderson of Chapel Hill, December 30.

ROBERT MILTON YOUNGLOVE, Bass Lake, Ind., to Miss Kathleen A. Webber of Chicago, November 14.

NOAH HAMPTON CHILES, Corryton, Tenn., to Miss Amadine Griffin in Louisville, Ky., December 26.

BENSON BERTHEAU ROE, San Francisco, to Miss Jane Faulkner St. John of New York, January 20.

ARTHUR W. SHAFER to Miss Lois Hein, both of Davenport, Iowa, November 24.

# Deaths

**Jacob Morton Mora** ✠ Chicago; University of Illinois College of Medicine, Chicago, 1925; in 1918 member of the Students Army Training Corps; assistant professor of surgery at his alma mater; diplomate of the National Board of Medical Examiners; specialist certified by the American Board of Surgery; member of the Chicago Surgical Society and the Chicago Pathological Society; fellow of the American College of Surgeons; interned at the Cook County Hospital; for many years on the courtesy staff of the Passavant Memorial Hospital; consulting surgeon, Kankakee State Hospital, Kankakee, Ill., and attending surgeon at the Mount Sinai Hospital, where he died February 10, aged 44, of dissecting aortic aneurysm with rupture due to arteriosclerosis.

**Edward Quin Thornton** ✠ Philadelphia; Jefferson Medical College of Philadelphia, 1890; since 1934 emeritus professor of therapeutics at his alma mater, where in 1932 he had been appointed Sutherland M. Prevost professor of therapeutics and where he served at one time as associate and assistant professor of materia medica; member of the Pathological Society of Philadelphia; fellow of the College of Physicians of Philadelphia; associate visiting physician, Pennsylvania Hospital; author of "A Manual of Materia Medica," "Dose Book and Manual of Prescription Writing" and "Medical Formulary"; editor of Tarrard on Treatment and Bruce on Treatment; died in the Jefferson Hospital January 16, aged 78, of carcinoma of the stomach.

**Roy Stanley Perkins** ✠ Lowell, Mass.; Medical School of Maine, Portland, 1914; specialist certified by the American Board of Radiology, Inc.; member of the New England Roentgen Ray Society and the American College of Radiology; served overseas during World War I; interned at the Salem Hospital, Salem, where he served as radiologist; radiologist and past president of the staff of St. Joseph's Hospital; radiologist and president of the staff of St. Johns Hospital; radiologist at the Josiah B. Thomas Hospital, Peabody, and the Tewksbury State Hospital and Infirmary, Tewksbury; died in Madbury, N. H., December 3, aged 54, of coronary occlusion.

**Francis Arthur Glass** ✠ Haverstraw, N. Y.; Fordham University School of Medicine, New York, 1914; served overseas during World War I; at one time coroner of Rockland County; served as school physician in Haverstraw and since 1934 health officer of the village of West Haverstraw; chief of the medical staff of local Selective Service Board number 763; visiting physician at the New York Reconstruction Home, West Haverstraw; on the staffs of St. Elizabeth's Hospital, New York, Good Samaritan Hospital, Suffern, and the Nyack Hospital, Nyack, where he died December 14, aged 54, of coronary sclerosis.

**Oscar Bruton Darden** ✠ Richmond, Va.; Medical College of Virginia, Richmond, 1918; member of the American Psychiatric Association; specialist certified by the American Board of Psychiatry and Neurology, Inc.; formerly vice president of the Tri-State Medical Association, composed of North and South Carolina and Virginia; associate professor of neuropsychiatry at his alma mater; in 1938 was appointed to the state advisory board on mental hygiene; on the staff of the Johnston-Willis Hospital; member of the medical staff of the Westbrook Sanatorium, where he died December 10, aged 53, of coronary occlusion.

**C. Wilson West** ✠ Reno, Nev.; Rush Medical College, Chicago, 1901; past president of the Nevada State Medical Association and the Washoe County Medical Society; fellow of the American College of Surgeons; lieutenant colonel, U. S. Public Health Service Reserve; head of Procurement and Assignment of Physicians of Nevada; served during World War I; local surgeon, Western Pacific Railway Company; district surgeon, Southern Pacific Railway Company; member of the Washoe General and St. Mary's hospitals; died January 10, aged 68, of hypertensive heart disease and coronary thrombosis.

**William Farquhar Shallenberger** ✠ Atlanta, Ga.; Johns Hopkins University School of Medicine, Baltimore, 1907; interned at the Johns Hopkins Hospital in Baltimore and later served as surgeon at the Hospital for Women of Maryland at Baltimore; member of the Southern Surgical Association; fellow of the American College of Surgeons; member of the Fulton County Rationing Board; at one time chief of the obstetric and gynecologic service at the Grady Hospital; on the staffs of St. Joseph Infirmary and the Piedmont Hospital, where he died December 16, aged 63, of coronary occlusion.

**Thomas Luther Coley** ✠ Major, U. S. Army, retired, Bethayres, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1895; served during World War I; entered the medical corps of the U. S. Army as a major in 1920; served in the Philippines and in the Canal Zone; retired by operation of law on Dec. 31, 1936; life member of the Pathological Society of Philadelphia and fellow of the College of Physicians of Philadelphia; formerly on the staff of the Methodist Episcopal Hospital in Philadelphia; died January 10, aged 75, of cardiac thrombosis and gastric ulcer.

**Homer Augustus Alexander** ✠ Topeka, Kan.; University of Kansas School of Medicine, Kansas City, 1914; interned at the Kansas City General Hospital; served during World War I; coroner of Shawnee County; died December 24, aged 63, of cerebral hemorrhage.

**Jeremiah E. Anderson,** McKee, Ky.; Hospital College of Medicine, Louisville, 1907; died in the Baptist Hospital, Louisville, December 22, aged 61, of coronary thrombosis.

**Tilford T. Bailey,** Port Gibson, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1892; also a druggist; died October 19, aged 88, as the result of a fall.

**Charles Tomlinson Baldwin,** Derby, Conn.; Bellevue Hospital Medical College, New York, 1883; member of the American Medical Association; died December 13, aged 90, of cerebral thrombosis.

**Joachim Ban,** West Hartford, Conn.; Magyar Királyi Pázmány Petrus Tudományegyetem Orvosi Fakultasa, Budapest, Hungary, 1918; died in Boston November 2, aged 52, of coronary heart disease.

**Clarence Earl Barcus,** Indianapolis; Medical College of Indiana, Indianapolis, 1903; veteran of the Spanish-American War and World War I; died in the Veterans Administration Facility December 20, aged 64, of bilateral tuberculous pneumonia.

**William C. Barnard** ✠ Seneca, Mo.; Marion-Sims College of Medicine, St. Louis, 1897; member of the staff of the Freeman Hospital, Joplin, where he died January 1, aged 74, of bronchopneumonia.

**Charles Elton Blanchard,** Youngstown, Ohio; University of Wooster Medical Department, Cleveland, 1902; died in the North Side unit of the Youngstown Hospital January 15, aged 76, following an ileocolostomy.

**John R. Campbell,** Somerset, Ky.; Louisville National Medical College, Medical Department State University, 1907; died December 20, aged 64, of burns received when his home caught fire.

**Hiram Bryan Cloud** ✠ Wolf Point, Mont.; Chicago College of Medicine and Surgery, 1917; served during World War I; also postmaster; died October 31, aged 59, of a fractured skull received in an automobile accident and hypostatic pneumonia.

**David W. Connally,** Antlers, Okla.; Gate City Medical College, Dallas, Texas, 1905; member of the American Medical Association; died in St. Joseph's Hospital, Paris, Texas, November 8, aged 73, of uremia, pyelitis, cystitis and hypertrophy of the prostate.

**Austin Pittenger Culbertson,** Vickeryville, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1884; died December 23, aged 87, of heart disease.

**Milton Mellon De Arman** ✠ Miami, Okla.; University of Tennessee Medical Department, Nashville, 1901; formerly mayor of Miami, member of the board of utilities and president of the Security Bank and Trust Company; on the staff of the Miami Baptist Hospital; died in the University Hospital, Columbus, November 4, aged 66, of lymphatic leukemia.

**Francis Joseph Dever** ✠ Bethlehem, Pa.; Medico-Chirurgical College of Philadelphia, 1902; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; at one time instructor in medicine at his alma mater; served as chief internist at St. Luke's Hospital; died in the U. S. Naval Hospital, Philadelphia, December 30, aged 65, of bronchopneumonia.

**Allen Otho Dobbins** ✠ Valparaiso, Ind.; Illinois Medical College, Chicago, 1903; formerly vice president of the Porter County Medical Society; died January 12, aged 75, of diabetes mellitus.

**Benjamin Perkins Doran** ✠ Uniontown, Pa.; Jefferson Medical College of Philadelphia, 1913; served during World War I; died October 7, aged 56, of coronary occlusion and diabetes mellitus.

**Luther Eliott Drew,** War, W. Va.; Meharry Medical College, Nashville, Tenn., 1923; died November 24, aged 53, of pneumonia.

**Winifred Smith Foster,** Oakland, Calif.; Boston University School of Medicine, 1897; died in the Highland-Alameda County Hospital November 24, aged 72, of cerebral hemorrhage and a skull fracture received in an automobile accident.

**John Martin Frankenburger,** Kansas City, Mo.; Kansas Medical College, Kansas City, Kan., 1893; member of the American Medical Association; at one time professor of surgery and clinical surgery at the University Medical College of Kansas City; past president of the Jackson County Medical Society; at one time superintendent of the General Hospital; on the staff of St. Joseph Hospital, where he died December 25, aged 75, of carcinoma.

**Samuel Orlin Gantt** ✙ Centerburg, Ohio; Starling Medical College, Columbus, 1890; died December 31, aged 83, of coronary occlusion.

**James Miner Gibbons,** Bismarck, N. D.; Northwestern University Medical School, Chicago, 1908; died in a local hospital November 24, aged 63, of cirrhosis of the liver.

**Albert Edward Gibson,** Los Gatos, Calif.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1887; died in San Jose December 8, aged 83, of a fractured right hip, shock and arteriosclerosis.

**Fred Chambers Goddard,** Uxbridge, Mass.; Tufts College Medical School, Boston, 1917; member of the American Medical Association; died in Milford November 7, aged 51, of coronary thrombosis.

**Abram Comingo Griffith** ✙ Kansas City, Mo.; University of Kansas School of Medicine, Kansas City, 1906; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians and member of the board of governors; major, medical reserve corps, U. S. Army, not on active duty; on the staffs of St. Luke's and St. Joseph hospitals; died in Shawnee, Kan., November 9, aged 63.

**Samuel Frank Hamilton,** Springfield, Ky.; Louisville Medical College, 1905; member of the American Medical Association; past president of the Washington County Medical Society; formerly county health officer; died December 31, aged 62, of carcinoma.

**Frank George Heinig,** Batavia, N. Y.; University and Bellevue Hospital Medical College, New York, 1925; interned at St. Vincent's Hospital of the City of New York; medical rating specialist at the Veterans Administration Facility; served during World War I; captain, medical corps, Army of the United States, not on active duty; died December 31, aged 47, of coronary thrombosis.

**James A. Hill** ✙ Jefferson City, Mo.; Ensworth Medical College, St. Joseph, 1905; for many years secretary and at one time president of the Cole County Medical Society; on the staff of St. Mary's Hospital; died December 9, aged 74, of coronary thrombosis.

**Otis Walter Hinshaw,** Long Beach, Calif.; Rush Medical College, Chicago, 1901; formerly on the staff of the Randolph County Hospital, Winchester, Ind.; died December 12, aged 69, of cerebral thrombosis.

**Henderson Looney Holman,** Ozark, Ala.; Memphis (Tenn.) Hospital Medical College, 1898; member of the American Medical Association; served as chairman of the city school board and as city councilman; died December 30, aged 70, of angina pectoris.

**George Edwin Hourn** ✙ St. Louis; Washington University School of Medicine, St. Louis, 1913; assistant professor of clinical otolaryngology at his alma mater; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology and the American Laryngological Association; on the staffs of the Children's Hospital, Missouri Baptist Hospital, St. Luke's Hospital and the Barnes Hospital, where he died December 10, aged 66, of congestive heart disease.

**Albert Huber** ✙ Kansas City, Kan.; University Medical College of Kansas City, 1904; on the staffs of the Bethany Hospital, St. Margaret's Hospital and the Providence Hospital, where he died December 4, aged 64, of coronary occlusion.

**D. Columbus Hyder,** Donna, Texas; University of the South Medical Department, Sewanee, Tenn., 1909; member of the American Medical Association; served during World War I; for two terms secretary of the Childress-Collingsworth Hall Counties Medical Society; died October 8, aged 69, of carcinoma of the liver.

**Francis Bartlett Kellogg,** Los Angeles; Yale University School of Medicine, New Haven, Conn., 1886; New York Homeopathic Medical College and Hospital, New York, 1887; fellow of the American College of Surgeons; died in Pasadena October 25, aged 89.

**Floyd Franklin Kirby** ✙ Waco, Texas; University of Louisville Medical Department, Louisville, Ky., 1917; formerly on the staff of the Scott and White Hospital, Temple; on the staff of the Hillcrest Hospital, where he died November 11, aged 54, of gunshot wounds of the chest and abdomen (homicide).

**George C. Kolb,** Cincinnati; Barnes Medical College, St. Louis, 1898; died in the Good Samaritan Hospital December 13, aged 75, of acute peripheral circulatory failure.

**Orion Frank Konantz,** Los Angeles; University of Pennsylvania Department of Medicine, Philadelphia, 1905; died November 29, aged 65, of heart disease.

**Earl Rudolph Lehnherr** ✙ Boston; Harvard Medical School, Boston, 1931; on the staffs of the New England Deaconess and Palmer Memorial hospitals; associated with the allergy clinic of the Massachusetts General Hospital; died December 4, aged 41, of lymphoma.

**Robert Willis Lenker,** Schuylkill Haven, Pa.; Jefferson Medical College, Philadelphia, 1908; member of the American Medical Association; served during World War I; examining physician for the schools of Schuylkill Haven; deputy coroner of Schuylkill Haven and South Manheim township; served on the staff of the Pottsville Hospital, Pottsville; died in the Jefferson Hospital, Philadelphia, December 3, aged 64, of cerebral hemorrhage.

**Eugene J. Luippold** ✙ Weehawken, N. J.; Baltimore Medical College, 1907; past president of the Hudson County Medical Society; fellow of the American College of Surgeons; on the staff of the Christ Hospital, Jersey City; past president of the Rotary Club of Union City, a director of the First National Bank and member of the chamber of commerce; died December 16, aged 58, of melanocarcinoma.

**John William Malcolm,** Lawton, Okla.; Kentucky School of Medicine, Louisville, 1895; died in Oklahoma City October 22, aged 74.

**Salo Matheus,** Buffalo; Julius-Maximilians-Universität Medizinische Fakultät, Würzburg, Bavaria, Germany, 1890; died in the Sisters Hospital December 7, aged 78, of hypostatic pneumonia and biliary obstruction.

**Herbert Eliott McDowell,** Spartanburg, S. C.; Atlanta Medical College, 1893; member of the American Medical Association; died October 31, aged 74.

**Francis E. Mingo,** Hugo, Minn.; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1905; member of the American Medical Association; served as health officer of Hugo and Centerville; local surgeon for the Northern Pacific Railroad; medical examiner for various insurance companies; on the staffs of the Bethesda Hospital, St. John's Hospital and St. Joseph's Hospital, St. Paul, where he died October 29, aged 63, of cerebral hemorrhage.

**Otho Lee Monroe** ✙ New York; Columbia University College of Physicians and Surgeons, New York, 1908; for many years served as instructor of otolaryngology at his alma mater; specialist certified by the American Board of Otolaryngology; on the staffs of the New York Foundling Hospital and the Manhattan Eye, Ear and Throat Hospital, where he died December 11, aged 62, of carcinoma.

**Richard Mooney,** Henryetta, Okla. (licensed in Oklahoma under the act of 1908); died November 17, aged 73, of heart disease.

**Daniel Jackson Murphy,** Vaiden, Miss. (licensed in Mississippi in 1908); died in the Jackson Infirmary, Jackson, November 30, aged 63, of cerebral hemorrhage and cardiorenal disease.

**Parker Herbert Murphy** ✙ Rochester, N. Y.; Albany (N. Y.) Medical College, 1896; examining physician for local board number 544; died in the Genesee Hospital December 18, aged 76, of coronary thrombosis.

**John Joseph Myers,** Fallon, Nev.; College of Physicians and Surgeons of San Francisco, 1899; died in Angwin, Calif., November 29, aged 77, of cerebral hemorrhage.

**Alice C. Nivison,** Philadelphia; the Hahnemann Medical College and Hospital, Chicago, 1887; died in the Hahnemann Hospital December 30, aged 86, of arteriosclerotic cardiovascular disease.

**Emil Zola Ossen,** Quincy, Mass.; State University of Iowa College of Medicine, Iowa City, 1931; member of the American Medical Association; interned at the Sinai Hospital, Baltimore; formerly resident physician at the Norfolk County Hospital, Braintree, Mass.; on the staffs of the Quincy City Hospital, the Beth Israel Hospital in Boston and the Milton Hospital in Milton; died December 16, aged 38, of coronary artery disease.

**Rowland Gardiner Paynter** ✠ Georgetown, Del.; University of Pennsylvania Department of Medicine, Philadelphia, 1898; president of the Farmers Bank of Delaware; president of the Kent County Mutual Life Insurance Company; vice president of the Delaware, Maryland and Virginia Railroad Company; trustee of the Delaware State Hospital, Farnhurst, and the University of Delaware; died in the University of Pennsylvania Hospital, Philadelphia, December 16, aged 70, of hepatic failure.

**Charles Adelbert Perry** ✠ Albany, N. Y.; Albany Medical College, 1914; served during World War I; major, special reserve, U. S. Public Health Service; chief of the department of medicine, Memorial Hospital; died suddenly December 24, aged 56, of heart disease.

**Hazel Graham Petrie,** Louisville, Ky.; Kentucky School of Medicine, Louisville, 1894; for many years physician for the Louisville and Nashville Railroad; died December 27, aged 72, of uremia.

**Robert Harry Phillips** ✠ Lansing, Mich.; University of Michigan Medical School, Ann Arbor, 1924; at one time instructor of internal medicine at his alma mater; interned and served a residency at the University Hospital in Ann Arbor; formerly secretary of the Ingham County Medical Society; on the staffs of the Edward W. Sparrow Hospital and St. Lawrence Hospital, where he died December 19, aged 46, of posterior coronary occlusion.

**Robert Simmons Phillips,** Providence, R. I.; New York Homeopathic Medical College and Hospital, New York, 1900; member of the American Medical Association; died October 23, aged 71, of coronary thrombosis.

**Wilfrid S. Picotte** ✠ Ishpeming, Mich.; School of Medicine and Surgery of Montreal, Que., Canada, 1896; served as president of the Marquette-Alger Counties Medical Society; for many years city health officer and county physician; served on the county board of supervisors and as president of the Peninsula Bank; trustee of the Morgan Heights Sanatorium, Marquette; died December 11, aged 70, of heart disease.

**Donald Grant Ralston** ✠ McConnelsville, Ohio; Ohio State University College of Medicine, Columbus, 1918; served during World War I; served as mayor, member of the board of public affairs and member and president of the county board of health; resident medical director of the Rocky Glen Sanatorium; died in Boston December 2, aged 49, of coronary occlusion.

**Clarence Addison Rathbun,** St. Cloud, Minn.; Bennett Medical College, Chicago, 1914; member of the American Medical Association; died in Maple Grove Township November 15, aged 53, of an accidental gunshot wound received while hunting.

**Albert S. Reed,** New York; New York Homeopathic Medical College and Hospital, New York, 1895; member of the local school board; died in St. John's Hospital December 14, aged 75, of heart disease.

**James William Reed,** Belfast, Tenn.; Vanderbilt University School of Medicine, Nashville, 1900; died in Nashville November 7, aged 71.

**William H. Rentzheimer** ✠ Hellertown, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1882; past president of the Northampton County Medical Society; chairman and examiner of the Bethlehem Draft Board number 3 during World War I; served for twenty-one years as secretary and director of the school district; died in St. Luke's Hospital December 6, aged 84, of myocardial degeneration and ruptured duodenal ulcer.

**Calvin R. Rickenbaugh** ✠ Carlisle, Pa.; University of Pittsburgh School of Medicine, 1910; for many years a member of the board of health; on the staff of the Carlisle Hospital; died December 29, aged 58, of heart disease.

**William O. Rickfort** ✠ Chicago; Rush Medical College, Chicago, 1902; one of the original members of the staff of the Evangelical Hospital of Chicago, where he died December 13, aged 69, of coronary thrombosis.

**Byron Sanborn** ✠ Topsfield, Mass.; Dartmouth Medical School, Hanover, N. H., 1900; for many years associate medical examiner; since 1929 school physician; died December 20, aged 70, of coronary occlusion.

**David E. Saxton,** Tampa, Fla.; Eclectic Medical Institute, Cincinnati, 1883; member of the city council; died December 14, aged 93, of pneumonia.

**Nicholas Julius Scarito** ✠ Lawrence, Mass.; George Washington University School of Medicine, Washington, D. C., 1912; medical examiner of the Fifth District; on the staff of the Lawrence General Hospital; jail physician; died December 3, aged 65, of coronary thrombosis.

**Emil Arnold Schlageter** ✠ Chicago; Chicago College of Medicine and Surgery, 1914; associated with the Chicago Health Department as a diagnostician (supervising health officer) for many years; served during World War I; died January 18, aged 61, of tuberculosis.

**Michael Joseph Shealey,** Anchorage, Ky.; New York Homeopathic Medical College and Flower Hospital, New York, 1912; formerly on the staffs of various Veterans Administration facilities; served as senior physician at the Central State Hospital, Lakeland; died December 13, aged 63, of heart disease.

**Wesley Morley Sherin** ✠ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1898; on the staff of the Jackson Park Hospital; died December 17, aged 69, of coronary occlusion.

**Alfred Dennis Simington,** Philadelphia; Meharry Medical College, Nashville, Tenn., 1900; formerly on the staffs of the Veterans Administration facilities in Mobile and Tuskegee, Ala.; died October 2, aged 75, of coronary occlusion.

**Justin C. Simpkins,** Glasgow, Mont.; Medical College of Indiana, Indianapolis, 1896; died November 26, aged 89, of myocardial degeneration and senility.

**Harold Lamberson Sippy** ✠ Winnetka, Ill.; Northwestern University Medical School, Chicago, 1928; interned at the Wesley Memorial Hospital; formerly a resident physician at the Neurological Hospital in New York; on the staff of St. Luke's Hospital, Chicago; found dead February 15, aged 44.

**Alfred Hudler Smith,** Springfield Gardens, N. Y.; Long Island College Hospital, Brooklyn, 1905; member of the American Medical Association; on the staff of the Jamaica (N. Y.) Hospital, where he died December 9, aged 65, of bleeding pyloric ulcer and coronary sclerosis.

**Harve Bayard Spangler,** Salt Lake City; St. Louis University School of Medicine, 1913; served during World War I; died in the Veterans Administration Facility November 9, aged 58, of cardiac decompensation and coronary sclerosis.

**Nicholas D. Stigall,** Burnside, Ky.; University of Louisville Medical Department, 1891; died December 2, aged 81, of chronic myocarditis.

**Miles Edwin Stover,** Pittsburgh; Western Pennsylvania Medical College, Pittsburgh, 1904; a member of the American Medical Association; served during World War I; died in St. Margaret's Hospital December 23, aged 70, of cerebral embolism.

**Charles W. Sweeney,** Bohon, Ky.; Kentucky School of Medicine, Louisville, 1900; past president of the Mercer County Medical Society; died December 19, aged 71, of coronary heart disease.

**Walter Boivin Taylor** ✠ Pickerington, Ohio; Ohio Medical University, Columbus, 1902; president of the Pickerington Bank; died December 31, aged 67, of carcinoma of the liver.

**Frank Carleton Thomas,** Lexington, Ky.; Johns Hopkins University School of Medicine, Baltimore, 1919; member of the American Medical Association; specialist certified by the American Board of Ophthalmology; on the staffs of the Good Samaritan and St. Joseph's hospitals; died December 2, aged 49, of heart disease and hypertension.

**Sam A. Thompson,** Mount Vernon, Ill.; Barnes Medical College, St. Louis, 1897; member of the American Medical Association; served as president of the Association of Surgeons of the Chicago and Eastern Illinois Railroad; formerly owner and medical director of the Mount Vernon Hospital; died in the Barnes Hospital, St. Louis, December 4, aged 75, of hypertensive cardiovascular disease.

**Charles B. Toms,** Newberry, Mich.; Detroit College of Medicine, 1902; member of the American Medical Association; at one time secretary of the Luce County Medical Society; assistant medical superintendent of the Newberry State Hospital; died December 26, aged 69, of coronary thrombosis.

**Bernard Tonsky,** Philadelphia; Maryland Medical College, Baltimore, 1911; member of the American Medical Association; died in the Mount Sinai Hospital December 15, aged 61, of coronary thrombosis.

**Harry Wallis Trask** ✠ West Boylston, Mass.; University of Vermont College of Medicine, Burlington, 1904; member of the American Medical Association; on the staff of the Holden District Hospital, Holden; for many years school physician in West Boylston; died November 5, aged 63.

**William Henry Veenboer** ✠ Grand Rapids, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1903; fellow of the American College of Surgeons; visiting surgeon, Blodgett and Butterworth hospitals; chief of staff and consulting surgeon at St. Mary's hospital, where he died December 21, aged 66, of gastric carcinoma.

**A. William Vogt,** New Alsace, Ind.; Missouri Medical College, St. Louis, 1884; died in the Margaret Mary Hospital, Batesville, December 3, aged 87, of carcinoma of the rectum with metastases.

**John N. Volicos,** Chicago; National Medical University, Chicago, 1896; died in a sanatorium in Hinsdale, Ill., December 24, aged 78, of cerebral hemorrhage and arteriosclerosis.

**Matthew D. Vosburgh,** St. Louis; Kansas City (Mo.) Homeopathic Medical College, 1899; died November 17, aged 80.

**Della Mary Walker,** Salem, Ohio; Woman's Medical College of Pennsylvania, Philadelphia, 1894; died December 23, aged 80, of hemiplegia due to cerebral accident.

**Herbert Walker,** Aurora, Ill.; University of Wooster Medical Department, Cleveland, 1893; fellow of the American College of Surgeons; served during World War I; died in the Veterans Administration Facility, Hines, December 9, aged 77, of carcinoma.

**Claudius Meyer Warsaw,** New York; College of Physicians and Surgeons, New York, 1885; also a pharmacist; served as diagnostician for the city health department; retired in 1939 as medical examiner of the Metropolitan Life Insurance Company after many years' service; died December 30, aged 84, of myocarditis.

**William Pinkney Webster,** Oxford, Miss. (licensed in Mississippi in 1925); member of the American Medical Association; died December 14, aged 74, of heart disease.

**Edward James Wheatley,** Danville, Ill.; Drake University College of Medicine, Des Moines, Iowa, 1910; past president of the Vermilion County Medical Society; served during World War I; on the staffs of St. Elizabeth and Lake View hospitals; at one time on the staffs of the Battle Mountain Sanitarium, Hot Springs, S. D., and the National Military Home, now known as the Veterans Administration Facility, where he died December 30, aged 63, of arteriosclerosis.

**Bertrand K. Wilbur,** La Jolla, Calif.; Hahnemann Medical College and Hospital of Philadelphia, 1891; organizer and for many years president of the Lower Merion (Pa.) Board of Health; died in the Scripps Memorial Hospital January 7, aged 75, of angina pectoris.

**William Leigh Williamson,** Bayonne, N. J.; New York Homeopathic Medical College and Flower Hospital, New York, 1916; member of the American Medical Association; past president of the Hudson County Medical Society; physician for the Hudson County Mosquito Control Association; on the staff of the Hudson Contagious Disease Hospital, Secaucus, and the Bayonne Hospital; formerly a member of the city board of education and chief medical inspector of the public school system; died December 28, aged 68.

**William Reynolds Wilson,** Villanova, Pa.; Jefferson Medical College of Philadelphia, 1888; chairman of the gynecologic section of the College of Physicians and member of the Philadelphia Obstetrical Society; served as chief of the women's dispensary of the German Hospital, Philadelphia, visiting physician, Lying-In Hospital, Philadelphia, and staff physician in the maternity department of the Presbyterian Hospital, Philadelphia; died in Bryn Mawr December 18, aged 81, of cerebrovascular disease.

CAPT. LUTHER SEXTON FORTENBERRY
M. C., A. U. S., 1908-1944

CAPT. ALFRED M. DUSCHATKO
M. C., A. U. S., 1918-1944

CAPT. ROBERT D. MCKENZIE
M. C., A. U. S., 1910-1944

## KILLED IN ACTION

**Luther Sexton Fortenberry,** Houma, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1934; member of the American Medical Association; served an internship at the Charity Hospital, New Orleans, and a residency at the Eye, Ear, Nose and Throat Hospital in New Orleans; specialist certified by the American Board of Otolaryngology; commissioned a captain in the medical corps, Army of the United States, on July 13, 1942; began active duty on Sept. 10, 1942; on entering the Army Air Corps was sent to Tarrant Field, Fort Worth, Texas, where he was assigned to Brooks Field, San Antonio, Texas, serving for two years as chief of the Eye, Ear, Nose and Throat Clinic; received overseas orders in September 1944 for the 65th Field Hospital unit, attached to General Patton's Armored Division; died in France Nov. 6, 1944, aged 35, as the result of an explosion of an enemy mine (nonbattle).

**Alfred Maloch Duschatko,** Scarsdale, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1942; diplomate of the National Board of Medical Examiners; interned at the Presbyterian Hospital in New York; commissioned a first lieutenant in the medical corps, Army of the United States, on June 2, 1942; began active duty on July 3, 1943; later promoted to captain; killed in action in Belgium Dec. 16, 1944, aged 26.

**Robert Douglas McKenzie,** Albany, Ga.; University of Rochester School of Medicine and Dentistry, Rochester, N. Y., 1935; member of the American Medical Association; formerly an intern at the Grady Hospital, Emory University Division; served a residency in otology, laryngology and rhinology at the Grady Hospital, Atlanta; commissioned a captain in the medical corps, Army of the United States, on Nov. 11, 1942; killed in action in the Southwest Pacific area Oct. 27, 1944, aged 34.

# Medical Examinations and Licensure

## COMING EXAMINATIONS AND MEETINGS

### NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in THE JOURNAL, February 24 page 483.

### BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, June 26-28. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

ALASKA: Juneau, March. Sec., Dr. W. M. Whitehead, Box 561, Juneau.

ARIZONA: * Phoenix, April 3-4. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: * *Eclectic.* Little Rock, June 7. Sec., Dr. C. H. Young, 1415 Main St., Little Rock. *Medical.* Little Rock, June 7-8. Sec., Dr. D. L. Owens, 701 Main St., Little Rock.

CALIFORNIA: *Oral.* Los Angeles, March 3. *Written.* San Francisco, July 9-12. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

COLORADO: * Denver, April 3-6. Final date for filing application is March 19. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver.

CONNECTICUT: * *Homeopathic.* Derby, March 12-13. Sec., Dr. J. H. Evans, 1488 Chapel St., New Haven. *Medical. Examination.* March 13-14. *Endorsement.* March 27. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven.

DELAWARE: *Examination.* Dover, July 10-12. *Reciprocity.* Dover, July 17. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * *Reciprocity.* Washington, March 12. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: * Jacksonville, June 25-26. Sec., Dr. Harold D. Van Schaick, 2736 S. W. Seventh Ave., Miami 36.

IDAHO: Boise, July 10. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, April 3-5. Superintendent of Registration, Department of Registration and Education, Mr. Philip Harman, Springheld.

KENTUCKY: Louisville, June 18-20. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Portland, March 13-14. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MARYLAND: *Medical.* Baltimore, June 19-20. Sec., Dr. J. T. O'Mara, 1215 Cathedral St., Baltimore. *Homeopathic.* Baltimore, June 19-20. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, March 13-16. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston.

MINNESOTA: * Minneapolis, April 17-19. Sec., Dr. J. F. DuBois, 230 Lowry Medical Arts Bldg., St. Paul 2.

MONTANA: Helena, April 2-4. Sec., Dr. O. G. Klein, First Nat'l. Bank Bldg., Helena.

NEW HAMPSHIRE: Concord, March 8-9. Sec., Board of Registration in Medicine, Dr. D. G. Smith, 77 Main St., Nashua.

NEW JERSEY: Trenton, June 19-20. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 9-10. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NORTH DAKOTA: Grand Forks, July 3. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Endorsement.* Columbus, April. Columbus, June. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * Oklahoma City, June 14-16. Sec., Dr. J. D. Osborn, Jr., Frederick.

PENNSYLVANIA: April 10-13. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 358 Education Bldg., Harrisburg.

RHODE ISLAND: Providence, April 5-6. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 25-27. Sec., Dr. N. B. Heyward, 1329 Blandina St., Columbia.

SOUTH DAKOTA: * Pierre, July 17-18. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, State Capitol, Pierre.

TEXAS: Galveston, June 4-6 Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: Burlington, June. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA: * Richmond, June 20-23. Sec., Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

WASHINGTON: * Seattle, July 16-18. Sec., Department of Licenses, Miss Nell Adams, Olympia.

WISCONSIN: * Milwaukee, June 26-28. Sec., Dr. C. A. Dawson, Tremont Bldg., River Falls.

* Basic Science Certificate required.

### BOARDS OF EXAMINERS IN THE BASIC SCIENCES

COLORADO: Denver, March 7-8. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

DISTRICT OF COLUMBIA: Washington, April 23-24. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: DeLand, June 1. Final date for filing application is May 17. Sec., Dr. J. F. Conn, John B. Stetson University, DeLand.

IOWA: Des Moines, April 10. Dir., Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

MICHIGAN: Ann Arbor and Detroit, May 11-12. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, April 3-4. Sec., Dr. J. C. McKinley, 126 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: Omaha, May 1-2. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln.

OKLAHOMA: Oklahoma City, April 9. Sec., Dr. J. D. Osborn, Jr., Frederick.

OREGON: Portland, March 3. Sec., Board of Higher Education, Mr. C. D. Byrne, University of Oregon, Eugene.

SOUTH DAKOTA: Yankton, June 19. Sec., Dr. G. M. Evans, Yankton.

TENNESSEE: Memphis, March 27-28. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: Madison, April 7. Sec., Professor R. N. Bauer, 152 W. Wisconsin Ave., Room 834, Milwaukee 3.

# Correspondence

## ATYPICAL PNEUMONIA, VIRAL PNEUMONIA OR VIROID PNEUMONIA?

*To the Editor:*—It is fortunate that lymphocytic choriomeningitis, first called aseptic meningitis, was not called atypical meningitis, or that epidemic nausea, vomiting and diarrhea (THE JOURNAL, January 6, p. 1) was never called atypical dysentery. In naming a disease or syndrome, atypical is as undesirable as the prefixes pseudo, meta or para.

Controversy on terminology may be unimportant in the face of many more pressing matters, but in regard to the disease now commonly called atypical pneumonia it is unfortunate that a better name is not generally adopted. The term primary atypical pneumonia was used by Cole in his De Lamar Lectures of 1927-1928 to include all primary forms of pneumonia clinically and bacteriologically different from typical pneumococcic lobar pneumonia. The term in this sense included pulmonary infections caused by pneumococci, streptococci, staphylococci, other bacteria and those of unknown cause. Any pneumonia, therefore, different from the clinical lobar form is atypical.

The cumbersome term primary atypical pneumonia of unknown etiology as proposed by the Surgeon General of the Army to name the disease in question conforms with this scheme if the whole term is used, but its length causes the undesirable contraction to atypical pneumonia without the necessary qualifying phrase. In Webster's Universal Unabridged Dictionary, atypical means having no type, devoid of typical character, which certainly is inappropriately applied to a disease like atypical pneumonia, now said to be by far the most important kind of pneumonia in the Army (*Am. J. M. Sc.* **209**:55 [Jan.] 1945). The adjective gives rise to the use of absurd compounds like "typical atypical." In a recent paper (*Am. J. M. Sc.* **209**:48 [Jan.] 1945) one author, the title of whose paper includes the words primary atypical pneumonia, avoids this difficulty by writing "a typical case of 'virus' pneumonia." I have not yet encountered "atypical atypical."

The term nonbacterial pneumonia has been used for the pneumonic forms, but again it is a negative one like atypical pneumonia and indicates something which is not. Since the first description of the disease as an entity (An Acute Infection of the Respiratory Tract with Atypical Pneumonia: A Disease Entity Probably Caused by a Filtrable Virus, THE JOURNAL, Dec. 24, 1938, p. 2377), which included both pneumonic and nonpneumonic forms of the disease, the mass of evidence has favored, but never quite proved, a filtrable virus or viruses to be the cause in most cases, and since recent experiments show that the disease can be transmitted by filtered secretions (THE JOURNAL, January 20, p. 146) why not use a positive term such as viral pneumonia, or virus-like pneumonia, or, better still, viroid pneumonia, which means the same thing? Francis (*Canad. J. Pub. Health* **35**:49 [Feb.] 1944) objects to "virus pneumonia" as connoting an entity of known cause, but really it is no more definitive than the broad term bacterial or even coccal. Grammatically, the adjective form viral is preferable to virus. The adjective viroid should not offend those who still object to virus or viral pneumonia but would convey the meaning desired and, if used alone as a noun, could designate both the pneumonic and nonpneumonic forms. The use of the suffix oid (likeness or resemblance) has precedent in naming diseases such as typhoid and varioloid. Eventually, when the specific cause or causes are found, a name or names can be coined to include both pneumonic and nonpneumonic forms of the disease. The names of influenza, ornithosis and psittacosis illustrate the point, as they include various clinical forms of the respective entities. At any rate, atypical pneumonia is a poor name for the important disease now extant.

HOBART A. REIMANN, M.D., Philadelphia.

# Current Medical Literature

## AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1935 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### American Journal of Medical Sciences, Philadelphia

**208**:701-830 (Dec.) 1944


*Myasthenia Gravis Treated with Large Doses of Neostigmine Methylsulfate, Intramuscularly and Intravenously, and with Neostigmine Bromide Orally. H. R. Viets.—p. 701.

Purulent Meningococcal Arthritis. W. P. Boger.—p. 708.

Sarcoidosis of Boeck: Metabolic Studies of 3 Cases. B. M. Stuart.—p. 717.

Electrophoretic Analysis of Plasma Proteins in Hyperthyroidism and Hypothyroidism. Lena A. Lewis and E. P. McCullagh.—p. 727.

Aspiration Biopsy of Thyroid in Evaluation of Thyroid Dysfunction. R. F. Lipton and M. S. Abel.—p. 736.

Cold Hemagglutinins in Primary Atypical Pneumonia and Other Respiratory Infections. By Commission on Acute Respiratory Diseases.—p. 742.

*Concomitant Administration of Sulfathiazole and Quinine or Atabrine. B. K. Harned and J. N. Etteldorf.—p. 750.

Effect of Quinidine on Mortality of Rats with Experimental Myocardial Injury. W. C. Thomas and T. R. Harrison.—p. 756.


**Neostigmine in Myasthenia Gravis.**—A patient with myasthenia gravis in Viets's clinic was maintained on a daily intake of twenty-five tablets (375 mg.) of neostigmine each twenty-four hours for more than two years without untoward effects. The average daily intake of 45 patients in the clinic was 163.5 mg. in twenty-four hours. These doses greatly exceed the 45 mg. usually recommended. There were no ill effects from taking these amounts. The patients did not become tolerant to the drug, and, when spontaneous remissions appeared, were able to reduce their maintenance intake quickly or to omit the drug entirely for varying periods of time. Neostigmine is relatively less toxic than was originally considered. The amount of neostigmine methylsulfate given parenterally also greatly exceeds the dose ordinarily used. One patient on entering the hospital was incapable of swallowing neostigmine bromide, and parenteral medication was begun. At first 1 mg. of neostigmine methylsulfate was injected intramuscularly every two or three hours. As this was insufficient to prevent attacks of dyspnea the dose was gradually increased to hourly injections of 1 mg. or 1.5 mg. One day he received 31 mg. of neostigmine methylsulfate. Three mg. of this total was given each day intravenously in 1,500 cc. of glucose solution. As the patient's general condition slowly improved, swallowing became possible. Three weeks after entrance to the hospital the intravenous medication was stopped and administration of neostigmine bromide orally was slowly substituted for some of the intramuscular and intravenous injections. Over a period of five weeks treatment by mouth was gradually extended until at the end of eight weeks the patient was maintained on oral neostigmine bromide, as he had been three months before entering the hospital. This was the first case in which the intravenous use of neostigmine methylsulfate was tried. It was found that the drug was well tolerated, it could be added to glucose solution, and other forms of medication could be used in the same intravenous preparation. When given over a period of hours, the same amount could be used as was given intramuscularly. Using the drip method, 1.5 mg. could be given in one hour. Subsequently in other patients this dose has been doubled without ill effects. Use of neostigmine intravenously opens up a new field for emergency treatment and lately has been frequently adopted for this purpose. When patients are taking more neostigmine than is needed to inhibit the cholinesterase, muscular fibrillations or fasciculations will appear as evidence of cholinergic overstimulation of the muscular skeletal system. In addition, salivation, a lowering of the heart rate and a stimulation of peristaltic activity, with or without cramps, will be noted. The symptoms of overdosage usually respond to atropine sulfate.

**Concomitant Administration of Sulfathiazole and Quinine or Atabrine.**—Harned and Etteldorf point out that in malarial districts the frequent necessity for the concurrent administration of antimalarials and sulfonamides would appear to demand an answer to the question of possible incompatibilities between these substances. The authors report data on the concomitant administration of sulfathiazole and quinine or atabrine to 99 volunteer hospitalized patients. The results obtained from these tests indicate that the incidence of unfavorable reactions, with the possible exception of vomiting, is not increased by the concomitant administration of sulfathiazole and quinine or atabrine. The highest doses studied were 6 Gm. of sulfathiazole daily for seven days, 2 Gm. of quinine bisulfate for the same period and 0.3 Gm. of atabrine daily for five days. The combination of drugs produced no detectable changes in the amount of hemoglobin or the total white blood count. Quinine and atabrine produced only minor changes in the free and total sulfathiazole in the blood and in the urine.

### American J. Obstetrics and Gynecology, St Louis

**48**:774-898 (Dec.) 1944


Relationship of Granulosa Cell Tumors of Ovary to Endometrial Carcinoma. C. B. Ingraham, W. C. Black and E. K. Rutledge.—p. 760.

*Minimal Histologic Changes in Biopsies to Justify Diagnosis of Cervical Cancer. R. W. TeLinde and G. Galvin.—p. 774.

Second Stage of Labor: The Descent Phase. L. A. Calkins.—p. 798.

Pathology of Malignant Neoplasm of Cervix Coincident with Pregnancy. C. B. Maino, A. C. Broders and R. D. Mussey.—p. 806.

Deaths in Gynecology. H. E. Miller.—p. 824.

Analysis of 101 Fatalities from Ectopic Pregnancy. P. F. Williams and J. D. Corbit.—p. 841.

Sodium Pentothal Anesthesia in Obstetrics. L. M. Hellman, L. B. Shettles, C. P. Manahan and N. J. Eastman.—p. 851.

Report of First 50 Cases of Ovarian Tumor Registry Conducted by American Gynecological Society. E. Novak.—p. 861.


**Diagnosis of Cervical Cancer.**—TeLinde and Galvin are concerned with the extremely early malignant lesions which are not infrequently called benign at a time when they could be cured by surgery or by irradiation. They call attention to the earliest histologic changes found in biopsies which have, in these cases, constituted the warning signal which has led to the ultimate diagnosis of cancer. One or more biopsies were taken from all of the cervices in this series. In approximately half of the cases, several gynecologic pathologists were unwilling to make the diagnosis of cancer from the changes noted in the biopsy specimens. Since in many of the cases hysterectomy was indicated because of fibroids or functional bleeding, it was easy to make the decision to perform a total hysterectomy. In all instances the entire cervix was cut into blocks, and in many cases much careful searching had to be done before an area of actual invasion was found. In 10 out of 11 cases the authors found, after removal of the cervices, absolute microscopic evidence of invasive carcinoma. In the eleventh case the only area of invasion was found in a biopsy specimen, but the removed cervix showed extensive changes in the surface epithelium such as were seen in the biopsies in the other cases. They do not advocate surgery rather than irradiation in these extremely early carcinomas. In the early microscopic lesions no one has had sufficient experience to be dogmatic in his preference for either surgery or irradiation. It is probable that the incidence of cures will be high by either surgery or irradiation. In this series the authors have performed total hysterectomy in all cases except 1. In this 1 exception the cervix was amputated during a Manchester operation. Following the discovery of early carcinoma in the amputated cervix, irradiation was instituted. The authors have favored surgery in order to obtain the cervix for study so as to substantiate or disprove the suspicion of cancer. Hysterectomy was favored in order to learn whether these early lesions can be cured with the conservation of one ovary. The average age of these patients was 36 years. Since the ovaries are involved late in cervical cancer, ovarian preservation may prove permissible in this group of cases. All of the 16 patients who were the subjects of this report are well, but that fact is of no statistical significance since the longest time that has elapsed since hysterectomy is four years.

## American Journal of Public Health, New York

**34:**1217-1316 (Dec.) 1944

Content and Administration of Medical Care Program: Brief of Report on Medical Care in National Health Program. J. W. Mountin.—p. 1217.
Id.: Unmet Health Needs. I. S. Falk.—p. 1223.
Id.: National Health Service: Scope, Financing and Administration. N. Sinai.—p. 1231.
Id.: Problems of Administration of Medical Care Program. J. R. Hege. —p. 1234.
Id.: Hospitals and Hospital Construction. G. L. Davis.—p. 1239.
Id: Training of Personnel and Research. G. St. J. Perrot.—p. 1244.
Educational Implications of School Health Program. G. M. Wheatley. —p. 1257.
Seventy-Five Years of Public Health in Massachusetts. R. S. Patterson and Mary C. Baker.—p. 1270.
*Sponsored Epidemic of Mumps in Private School. M. I. Levine.—p. 1274.
Salmonella Types Isolated in Georgia in 1941-1943, Including a New Type: Salmonella Georgia. Janie F. Morris, Alice Brim and T. F. Sellers.—p. 1277.
Isolation of Shigella Paradysenteriae Type P288 of Boyd from Case of Acute Diarrhea. Janie F. Morris, Alice Brim and T. F. Sellers. —p. 1279.

**Sponsored Epidemic of Mumps.**—Levine reports the results of an attempt to cause an epidemic of mumps in a private school of 161 children. Out of 114 susceptible children exposed, 62 contracted the disease within a period of three months. Six of these developed complications. There were 4 cases of mumps encephalitis, 1 case of orchitis and 1 of probable mild pancreatitis. A questionnaire was sent out requesting complete information on the children who contracted the disease, with an added question as to whether any other members of the family contracted the disease. The final analysis revealed that besides 1 teacher, who was incapacitated with the disease for two weeks, 10 parents suffered from the infection, a possibility which was completely overlooked when the plan was suggested. It is doubtful that any further epidemics will be sponsored by the school.

## American Journal of Surgery, New York

**66:**287-424 (Dec.) 1944

Gas Gangrene in Amphibious Warfare in Pacific Area. H. B. Neel and J. P. Cole.—p. 290.
Carcinoma and Lymphosarcoma of Colon: Case of Lymphosarcoma of Descending Colon. B. T. Tilton.—p. 300.
Healing of Intestinal Anastomosis. A. E. Spelman.—p. 309.
*Aire-Lite: New Plastic Medium of Clinical Immobilization. J. Kulowski, A. M. French and H. R. Erickson.—p. 315.
Procidentia: Chaffin Vaginal Subtotal Hysterectomy for Cure of Fourth Degree Prolapse—Review of Technic and Results. R. C. Chaffin. —p. 328.
Failures in Mammaplastic Surgery. E. K. LaRoe.—p. 339.
Factors in Male Sterility: Critical Review of 135 Cases. J. G. Keshin and B. D. Pinck.—p. 346.
Internal Fixation for Lumbosacral Fusion. D. King.—p. 357.
Sclerotherapy of Varicose Veins: Utilization of Intravenous Air Block. E. J. Orbach.—p. 362.
Pitfalls to Be Avoided in Cholecystectomy. M. M. Simon.—p. 367.
Shaft Fracture Immobilization Without Plaster. H. L. Wenger.—p. 382.
Refrigeration Anesthesia: With Special Reference to Treatment of Severely Damaged Extremity Complicated by Visceral Injury. G. Miyakawa.—p. 384.
Method of Removing T Tubes from Common Bile Duct. B. J. Ficarra. —p. 387.

**Aire-Lite: New Plastic Medium of Immobilization.**—Aire-Lite is a stockinet form of bandage made by loosely knitting a yarn composed of a mixture of cellulose acetate and a regenerated cellulose rayon. The knitted bandage is processed to control shrinkage, setting and drying characteristics. This processing leaves the bandage flexible and dry, in which form it is applied to the body. When the bandage is in place it is sprayed with a solvent mixture composed of a combination of volatile liquids with acetone as one of the active ingredients, which initiates setting and drying until it becomes rigid. Kulowski and his associates review observations in 136 cases in which 200 plastic casts and apparatus made with Aire-Lite were employed. The bandage must not be stretched or pulled into place, because such tension will result in undue subsequent shrinkage when setting and drying have occurred. The wetted bandage should not be molded, because this will cause subsequent gelatinization and loss of porosity when the bandage has hardened. The bandage can be applied as stockinet, splint or roller bandage. Users of Aire-Lite should not expect it to replace plaster. Aire-Lite fixation in acute fractures is not wholly practicable because of the time element involved. Aire-Lite can be used effectively instead of plaster in a variety of orthopedic conditions. Aire-Lite fixation can be used also in the convalescent stages of both simple and compound fractures. Since Aire-Lite is a synthetic plastic product, atmospheric conditions may influence its behavior and interfere with uniformity of its setting and drying characteristics. One aspect of this problem is the variable tendency it has toward shrinkage and creepage, which must be anticipated and guarded against by observing a proper technic and keeping the patient under observation, especially for the first twenty-four hours after a cast has been applied. The light weight, ventilation, resistance to moisture, nonresistance to x-rays, general tidiness attending its use and acceptability to the patient gives Aire-Lite a distinct advantage over plaster.

## American Journal of Tropical Medicine, Baltimore

**24:**331-390 (Nov.) 1944

Adaptation of Public Health Practice to Foreign Cultures. Janet Welch Mackie.—p. 331.
Blood Pressure of Cuna Indians. B. H. Kean.—p. 341.
Health Status of Marshallese: Preliminary Report. L. S. Baer and R. R. Allen.—p. 345.
Consideration of Mechanism of Splenic Infarcts in Malaria. R. H. Rigdon.—p. 349.
Check List of Mite Vectors and Animal Reservoirs of Tsutsugamushi Disease. R. W. Williams.—p. 355.
Probable Role of Cat Flea Ctenocephalides Felis in Transmission of Murine Typhus. J. V. Irons, S. W. Bohls, D. C. Thurman Jr. and T. McGregor.—p. 359.
Spontaneous Histoplasmosis Occurring in Dog. W. P. Callahan Jr. —p. 363.
Comparative Amebacidal Activity of Phenyl Arsine Oxide (Mapharsen), Related Arsenicals and Other Agents. H. H. Anderson and T. T. K. Chuan.—p. 367.
Pathologic Study of Acute Lesions Produced by Plasmodium Lophurae in Young White Pekin Ducks. R. H. Rigdon.—p. 371.
Unusual Breeding Places of Mosquitoes in Vicinity of Keesler Field, Mississippi. F. N. Young Jr. and W. N. Christopher.—p. 379.
Cultivation of Leishmania in Yolk Sac of Developing Chick Embryo. Helen Jones, G. Rake and Dorothy Hamre.—p. 381.
Improved Method for Mounting Mosquito Larvae. J. F. Wanamaker. —p 385.

## American Review of Tuberculosis, New York

**50:**473-586 (Dec.) 1944

Effect of Sensitivity on Distribution of Tubercle Bacilli in Tuberculosis. W. L. Brosius and C. E. Woodruff.—p. 473.
*Significance of Tubercle Bacilli in Gastric Contents. D. D. Feld.—p. 481.
Demonstration of Tubercle Bacilli in Employee Group with Clinically Inactive Pulmonary Tuberculosis. E. M. Medlar and Ada Chree Reid. —p. 490.
Closure of Tuberculous Cavities. J. Loesch.—p. 500.
Bovine Tuberculosis in the United States: Its Conquest and Its Effects on Public Health. H. R. Smith.—p. 520.
Specific Metabolic Products of Tubercle Bacillus: Unsuccessful Search for Them in Urine of Tuberculous Patients. J. T. Riordan.—p. 534.
Promin Inhalation Therapy in Pulmonary Tuberculosis. J. S. Edlin, I. D. Dobrowitz, F. K. Safford Jr. and F. S. Butler.—p. 543.
Statistical Data: What Happened to Tuberculous Death Rate? Mary Dempsey.—p. 556.

**Tubercle Bacilli in Gastric Contents.**—Feld states that examination of gastric contents for tubercle bacilli is practiced at the Muirdale Sanatorium of all patients who state that they do not raise sputum or whose sputum is negative. It is also used when there is doubt as to the source of the sample presented. Repeated aspirations are performed on successive days, the number varying from two to six. The material used for examination consists of undiluted gastric contents aspirated from fasting patients. Only occasionally was it necessary to do a lavage. Since 1941 only cultures have been used, and guinea pig inoculation is resorted to only in special cases. Culture results are very accurate. All specimens are cultured on three slants of Petragnani's medium. In the course of a five year period a total of 4,204 gastric specimens from 868 adult patients were examined. The gastric contents of 404 of these patients were never positive, but the other 464 patients gave positive specimens. Of the 2,866 gastric examinations made on these 464 patients 1,271, or 44.3 per cent, proved positive. Cultures of concentrated sputum were made simultaneously of all patients except those without sputum. The author stresses

the importance of consecutive examinations. When five are done there is little likelihood of missing positive cases; if these examinations are negative there is not much likelihood of an active lesion. Patients who at first have only positive gastric specimens can and do develop positive sputum. The interval of repeating these examinations need not be greater than four to six months. Before patients are discharged it is necessary that they have five negative consecutive examinations.

## Annals of Surgery, Philadelphia

**120**:817-952 (Dec.) 1944

Wounds of Heart. D. C. Elkin.—p. 817.
Beneficial Effect of Intravenous Infusions in Acute Pericardial Tamponade. F. W. Cooper, E. A. Stead Jr. and J. V. Warren.—p. 822.
*Synovial Sarcoma. C. D. Haagensen and A. P. Stout.—p. 826.
*Synovial Sarcoma and Normal Synovial Tissue Cultivated in Vitro. M. R. Murray, A. P. Stout and I. A. Pogogeff.—p. 843.
*Physiologic Observations on Patients with External Pancreatic Fistula. J. M. Miller and T. B. Wiper.—p. 852.
Healing of Surface Cutaneous Wounds: Its Analogy with Healing of Superficial Burns. J. M. Converse and A. H. T. Robb-Smith.—p. 873.
Battle Casualties in South Pacific Evacuation Hospital. W. J. Potts.—p. 886.
Urinary Complications of Pelvic Endometriosis. J. R. Goodall.—p. 891.
Application of Staging in Removal of Difficult Wilms Tumors. E. D. Sugarbaker.—p. 901.
External Pin Transfixion of Fractures: Analysis of 80 Cases. I. E. Siris.—p. 911.

**Synovial Sarcoma.**—Haagensen and Stout made tissue culture studies in their cases. The 3 tumors from which these cultures were obtained all had striking histologic characteristics. They were composed of an inextricable admixture of mesothelial cells, which often lined slits or tubes and secreted a mucicarminophilic substance with strands of active hyperchromatic fibrosarcoma-like cells associated with reticulin fibers. The relative amounts of these two cell forms varied enormously, but both of them were always present. The authors reexamined cases reported as synovioma, synovial sarcoma or by some related term. Those that did not fulfil the aforementioned criteria were rejected. This screening yielded 95 cases, to which the authors add 9 previously unreported examples. Males preponderated in the proportion of 3 to 2. The tumor may develop at any age but is most frequently found in early adult life. Nearly half of the synovial sarcomas have been found in the region of the knee joint. The initial symptom is usually pain, which may be present for several years before the tumor is noted. In 42 fatal cases the total duration varied from five months to sixteen years, the mean total duration being 5.7 years. Only 3 patients in the group of 104 have been clinically cured for more than five years after treatment. Synovial sarcoma is slow growing. Although the disease apparently remains localized for several years, metastases eventually manifest themselves in the majority of cases. Diagnosis should be established by microscopic examination of a small fragment obtained by incisional biopsy which causes the least possible trauma. Synovial sarcoma is always composed of two sharply contrasted tissue forms, one reproducing caricatures of synovial structures, the other resembling fibrosarcoma, and the two are inextricably intermingled. The treatment should be radical. The authors recommend high amputation and possibly regional lymph node dissection. There is no proof that radiotherapy is effective.

**In Vitro Culture of Synovial Sarcoma.**—Murray and his associates cultivated material from 3 human synovial sarcomas in vitro and compared its characteristics with similarly treated normal synovial tissue from the knee joint of the adult rat. In general the human tumor cultures parallel those from the normal rat knee joint as regards form and behavior, though the normal cultures exhibit more diversity of form and more distinctive cell types. The normal synovial cell appears to be a specific cell type distinct from other epithelium and from the fibroblast. The synovial sarcoma appears to be a distinct type of neoplasm exhibiting certain similarities to the mesothelioma.

**External Pancreatic Fistula.**—Miller and Wiper report observations on 3 patients with an external pancreatic fistula. The general nutritional state of these patients was directly proportional to the severity of the fistula. The first patient had experienced severe weight loss. Gradual diminution in flow of the fistula was accompanied by increased appetite and gradual increase in weight. By the time closure of the fistula occurred, normal weight had been restored. The patient who was losing the least amount of secretion presented the least alteration of body substance. Estimates of other investigators have placed the daily amount of pancreatic flow into the duodenum in a range varying from 500 to 1,500 cc. The patient studied by the authors secreted amounts ranging up to 1,770 cc. a day. The volume flow during the daytime was greater than at night, and postprandial secretion showed a decided increase. Severe continued loss of pancreatic fluid containing large amounts of electrolytes produces changes in the plasma electrolyte pattern. Great alteration was observed in the water balance, in the plasma protein level and in the plasma sodium. The sodium loss in severe pancreatic fistulas produces a clinical syndrome similar to that described by Addison, with the exception that in these individuals adrenal disease is not present. This analogy has not been previously stressed. The administration of adequate amounts of sodium and water in the presence of sufficient plasma protein to hold them in the circulation alleviates the symptoms peculiar to this syndrome. Diminution in pancreatic secretion through the fistula may be obtained by a number of drugs, but ephedrine and sodium bicarbonate are the most practical. Detailed physiologic observations on pancreatic function support the theory that secretin secretion is a filtration process. Sodium ion is present in equal amounts in both blood plasma and pancreatic secretion. The concentrations of chloride and bicarbonate ions are the same in blood plasma and pancreatic secretion. The same amount of ionizable calcium is present in blood plasma and pancreatic secretion. Sulfanilamide is found in the same amount in blood plasma and pancreatic secretion. This suggests the use of sulfanilamide in acute inflammatory disease of the pancreas. Pancreatin flow is greatly dependent on the state of hydration of a person. Large amounts of ionizable calcium are normally returned to the gastrointestinal tract through pancreatic secretion. This phenomenon has not received the recognition it warrants. Pancreatic secretion is stimulated by the administration of histamine intramuscularly and by the intravenous administration of isotonic solution of sodium chloride or 5 per cent glucose in isotonic solution of sodium chloride intravenously.

## Archives of Dermatology and Syphilology, Chicago

**50**:355-460 (Dec.) 1944

Exit Dose in Dermatologic Roentgen Therapy. G. C. Andrews, C. B. Braestrup and E. B. Heisel.—p. 355.
Combined Bodian and Masson Staining Method Applied to Skin. W. B. Dublin.—p. 361.
Erythema Elevatum Diutinum. L. W. Ketron.—p. 363.
Nevus Anemicus (Voerner). F. O. Piorkowski.—p. 374.
Postwar Graduate Training in Dermatology and Syphilology. C. G. Lane and G. M. Lewis.—p. 378.
*American Onchocerciasis. L. Goldman.—p. 385.
American Leishmaniasis of Frambesial Type. O. G. Costa.—p. 394.
CIII. Kaposi's Varicelliform Eruption: Report of 5 Cases. C. W. Lane and W. C. Herold.—p. 396.
Ptosis of Kidney as Cause of Pruritus Vulvae. A. Strickler.—p. 405.

**American Onchocerciasis.**—Goldman thinks that the study of American onchocerciasis, which is of great importance to public health in Guatemala and Mexico, may help to understand a closely related cutaneous nematode infection which is of some military importance at the present time, filariasis caused by Wuchereria bancrofti. In spite of the dissimilarities in the clinical pictures of these two forms of filariasis, there are certain broad general relationships, especially as regards reactions and response to therapy. The parasite which causes onchocerciasis is Onchocerca volvulus, a member of the true filaria group. The mechanism of infection of American onchocerciasis is as follows: Through the bite of an infected simuliid, the microfilariae are introduced into the skin. The infective worm travels superficially in the skin until surrounded by cellular inflammatory infiltrate, when gradually it becomes embedded in fibrous connective tissue, where the adult worm develops. The adult forms of Onchocerca volvulus are present in subcutaneous nodules about the head and shoulders especially and the microfilariae in superficial tissues of skin and eye. The clinical triad of onchocerciasis includes onchocercoma, onchophthal-

mia and the nonspecific forms of onchodermatitis. The commonest type of dermatitis, perhaps, outside of pruritus, is the reddened, edematous face. The therapy is surgical removal of the nodules containing the adult worms. Present day methods of control are concerned with the treatment of the human carrier. According to some investigators there is a possibility of spread of onchocerciasis through carriers from infected areas of Central America coming into areas of the United States where the insect vector, the Simulium, is found. Moreover, the Pan American Highway traverses part of the onchocerciasis areas of Central America.

## Archives of Neurology and Psychiatry, Chicago

**52:**431-570 (Dec.) 1944

Studies on Diseases of Muscle: I. Progressive Muscular Dystrophy: Clinical Review of 40 Cases. R. E. Shank, Helena Gilder and C. L. Hoagland.—p. 431.
Pathology of Demyelinating Diseases as Allergic Reaction of Brain. A. Ferraro.—p. 443.
Human Pyramidal Tract: X. Babinski Sign and Destruction of Pyramidal Tract. A. M. Lassek.—p. 484.
Synchronization of Spontaneous Activity in Denervated Human Muscle. A. M. Harvey and S. W. Kuffler.—p. 495.
Electric Convulsive Therapy of Psychoneuroses. L. B. Kalinowsky, S. E. Barrera and W. A. Horwitz.—p. 498.
Reaction of Meninges to Blood.—E. M. Hammes Jr.—p. 505.
Electroencephalographic Evaluation of Psychopathic Personality: Correlation with Age, Sex, Family History and Antecedent Illness or Injury. J. R. Knott and J. S. Gottlieb.—p. 515.
*Intracranial Pressure in Human Subject at Altitude. E. W. Peterson, B. S. Kent and W. V. Cone.—p. 520.
Relation of Circulus Arteriosus to Hypothalamus and Internal Capsule. H. S. Rubinstein.—p. 526.
Neurologic Complications Following Use of Continuous Caudal Anesthesia. W. G. Peacher and R. C. L. Robertson.—p. 531.

**Intracranial Pressure in Human Subject at Altitude.**—Peterson and his associates studied the effects of altitude on the intracranial pressure of a patient with a large cranial defect. The tremendous size of the defect and the fact that there was no retraction of the scar made instrumental observations possible. The defect measured approximately 16 by 10 by 2.5 cm. and was perfectly healed and freely mobile under stresses of artificially increased intracranial pressure. A decompression chamber was used throughout the experiments. Preliminary decompression was carried out with a view to familiarizing the subject with the knack of maintaining the patency of the eustachian tubes and to acquainting him with the unusual surroundings of the chamber in order to reduce emotional upset to a minimum. Measurements were made at altitudes up to 30,000 feet and under conditions both of sudden and of more prolonged anoxia. The methods included (1) direct observations on a huge cranial defect, (2) herniometric recordings with photographic check, (3) plethysmographic technic and (4) recording of the spinal fluid pressure through a lumbar puncture. There was no significant increase in the intracranial pressure in man (other than normal variations) at high altitude and under conditions either of sudden or of more prolonged anoxia. These results are regarded as of particular importance with respect to transportation of casualties and sick persons by air. Experience with other patients with head injuries indicates that these casualties tolerate air transportation well. It may be to them a life saving measure by providing rapid, definitive treatment. Any specific contraindication bearing on changes in intracranial pressure is not in accord with the experimental and practical evidence obtained from the case described.

## Archives of Pathology, Chicago

**38:**365-444 (Dec.) 1944

Experimental Poliomyelitis in Mice: Observations on Its Genesis and on the Histologic Changes. W. Ehrich and Claire Foster.—p. 365.
Nondevelopment of Septum Transversum with Congenital Absence of Anterocentral Portion of Diaphragm and of Suspensory Ligament of Liver and Presence of Elongated Ductus Venosus and Pericardioperitoneal Foramen. A. E. Casey and Eleanor H. Hidden.—p. 370.
Aberrant Pancreatic and Gastric Tissue in Intestinal Tract. Mary Maher Troll.—p. 375.
Experimental Studies on Therapy and Prevention of Degenerative Vascular Diseases: II. Effects of Several Detergents on Experimental Cholesterol Atheromatosis of Rabbits. W. C. Hueper.—p. 381.
Experimental Pathology and Physiology of Adrenal Cortex. Production of Addison's Disease in Laboratory Animals. J. M. Rogoff.—p. 392.

## Archives of Surgery, Chicago

**49:**301-366 (Nov.) 1944

Genetic Aspects of Cancer Problem: Preliminary Report on Survey of Constitution as Related to Cancer. F. Blank.—p. 301.
Pilonidal Cysts. L. B. Felmus, C. C. Woods and D. H. Sprong Jr.—p. 316.
Rupture of Intestine Caused by Nonpenetrating Trauma of Abdominal Wall: Report of Cases. G. H. Hunt and J. N. Bowden.—p. 321.
Epithelization of Experimental Wounds. F. L. Apperly and M. Katherine Cary.—p. 327.
Differences in Patterns of Bites of Venemous and of Harmless Snakes. C. H. Pope and R. M. Perkins.—p. 331.
Review of Urologic Surgery: Kidney. A. J. Scholl and others.—p. 337.
Progress in Orthopedic Surgery for 1943: XII. Conditions Involving Foot and Ankle. E. D. W. Hauser and R. P. Montgomery.—p. 348.
Id.: XIII. Tuberculosis of Bones and Joints. A. D. Smith.—p. 356.
Id.: XIV. Chronic Arthritis. L. T. Swaim.—p. 357.
Id.: XV. Fracture Deformities. E. M. Regen, R. B. Raney, G. Barber and P. Harmon.—p. 362.

## Arkansas Medical Society Journal, Fort Smith

**41:**121-144 (Nov.) 1944

Differential Diagnosis of Glycosuria from Diabetes Mellitus. L. N. Bollmeier and A. Meyer.—p. 121.
Modern Concepts of Cardiovascular Disease: Committee on Heart, Arkansas Medical Society. C. T. Chamberlain.—p. 127.

**41:**145-164 (Dec.) 1944

Modern Concepts of Cardiovascular Disease. C. T. Chamberlain.—p. 145.
Carcinoma of Large Bowel. W. G. Cooper.—p. 147.
Arkansas State Blood Plasma Program. P. C. Eschweiler.—p. 149.

## Bull. of Johns Hopkins Hospital, Baltimore

**75:**253-325 (Nov.) 1944

Interrelationships of Glomerular Filtration Rate (Mannitol Clearance), Extracellular Fluid Volume, Surface Area of Body and Plasma Concentration of Mannitol: Definition of Extracellular Fluid Clearance Determined by Following Plasma Concentration After Single Injection of Mannitol. E. V. Newman, J. Bordley III and Jane Winternitz.—p. 253.
Atypical Pneumonia: Diagnostic Problem in Tropics. P. A. Tumulty.—p. 269.
*Vitamin C Economy in Human Subject. M. Pijoan and E. L. Lozner.—p. 303.
*Note on the Minimum Requirements of Man for Vitamin C and Certain Other Vitamins. V. A. Najjar, L. E. Holt and Harriet M. Royston.—p. 315.
Effect of Intravenous Injection of Epinephrine and Angiotonin Before and After Production of Neurogenic Hypertension. Caroline B. Thomas and R. L. McLean.—p. 319.

**Vitamin C Economy.**—Pijoan and Lozner attempted to ascertain (1) the minimal daily requirement of ascorbic acid necessary to protect against scurvy and (2) the period of protection afforded by saturation with the vitamin. The only known anatomic lesion of vitamin C deficiency is the scorbutic process, and the evaluation of ascorbic acid deficiency from an assay of the diet is untrustworthy. Not until a diet can be demonstrated to produce a steady linear decline in the vitamin C content of the white cell-platelet layer (or some index derived from whole blood) or to produce scurvy can one call it deficient. One subject was put on a vitamin C free regimen until there was a steady linear decline of the blood white cell-platelet values. He was then given at protracted intervals small amounts of vitamin until such time as the blood tissue white cell-platelet values remained constant (25 to 26 mg. per hundred grams). At the end of twenty-one months on the constantly maintained low values there were no scorbutic manifestations. An experimental wound produced in the twenty-first month was followed by adequate collagen and reticulum formation with normal tissue healing as noted on biopsy. Six subjects were saturated with ascorbic acid (400 to 500 mg. daily for four to six days) and then placed on a diet lacking in vitamin C but normal in all other respects. None of the subjects developed scurvy until five to six months had elapsed and they seemed normal in every respect until two weeks prior to the onset of the disease. Gingivitis appeared in only 1 case following the advent of perifollicular hemorrhages.

**Requirements for Vitamin C and Other Vitamins.**—Najjar and his associates gave to a group of 7 young adults for a period of eighteen months a diet in which all water soluble vitamins were provided as pure principles in carefully measured quantities. With the exception of thiamine, the intake of which was gradually reduced until deficiency symptoms

appeared, the vitamins were given in quantities which did not vary throughout the entire experimental period. No symptoms of any deficiency other than that of thiamine were observed. Of particular interest are the observations on ascorbic acid, which confirm those of Pijoan and Lozner that scurvy does not develop on a daily intake of from 18 to 25 mg. of ascorbic acid.

## Delaware State Medical Journal, Wilmington

**16**:185-196 (Dec.) 1944

Remarks on Bright's Disease. W. P. Belk.—p. 185.

## Endocrinology, Springfield, Ill.

**35**:409-530 (Dec.) 1944

Observations on Histochemical Reactions in Human Placenta, with Special Reference to Significance of Lipoids, Glycogen and Iron. E. W. Dempsey and G. W. Wislocki.—p. 409.
Comparative Bioassay of Several Extracts of Adrenal Cortex in Tests Employing Four Separate Physiologic Responses. R. E. Olson, F. A. Jacobs, D. Richert, S. A. Thayer, L. J. Kopp and N. J. Wade.—p. 430.
Growth of Anterior Lobe of Pituitary and Testes in Cockerel. W. R. Breneman.—p. 456.
Glycogenic Activity of Certain Crystalline Steroids of Adrenal Cortex when Administered Singly and with Cortical Extract to Fasted, Normal and Adrenalectomized Rats. R. E. Olson, S. A. Thayer and L. J. Kopp.—p. 464.
Further Observations on Induced Ovulation in Mice: Refractory Period in Early Pregnancy. H. O. Burdick and V. Ciampa.—p. 473.
Hepatic Lesions and Experimental Hyperthyroidism. V. A. Drill and F. D. Gunn.—p. 477.
Effect of Diethylstilbestrol on In Vitro Formation of Phospholipids in Liver as Measured with Radioactive Phosphorus. A. Taurog, F. W. Lorenz, C. Entenman and I. L. Chaikoff.—p. 483.
Effect of Thyroxin on Response of Thyroid Gland to Thyrotropic Hormone. Ruth Cortell and R. W. Rawson.—p. 488.
Functional and Morphologic Alterations of Reproductive System of Female Rat Following Prepuberal Treatment with Estrogens. H. B. Hale.—p. 499.
Evidence Suggesting Role of Lactogenic Hormone in Estrous Cycle of Albino Rat. J. W. Everett.—p. 507.

## Gastroenterology, Baltimore

**3**:337-434 (Nov.) 1944

Criteria of Incipient Vitamin Deficiency. A. J. Carlson.—p. 337.
*Relationship Between Clinical Picture of Mild or Early Vitamin Deficiency and Laboratory Determinations of Vitamin Levels. J. M. Ruffin, D. Cayer and W. A. Perlzweig.—p. 340.
Summary of Problem of Incipient Vitamin Deficiency. D. L. Wilbur.—p. 357.
Disease of Stomach: Review of Current Literature. J. G. Mateer, J. I. Baltz, P. D. Comanduras, H. H. Steele and S. Brouwer.—p. 360.
Total Gastrectomy: Clinical and Physiopathologic Study. F. Milanes, T. Vega, E. Morales, A. Rodriguez and A. Rodriguez Diaz.—p. 380.
Small Intestine: Review of Current Literature. E. D. Kiefer.—p. 388.
Irritable Bowel Syndrome. G. A. Peters and J. A. Bargen.—p. 399.
Some Characteristics of Mucous Secretion in Digestive Tract. F. Hollander.—p. 403.
Some Observations on Gastric Secretion in Normal Rats. S. A. Komarov, H. Shay, M. Rayport and S. S. Fels.—p. 406.

**Early Vitamin Deficiency.**—In the experience of Ruffin and his associates glossitis, papillary atrophy of the tongue, cheilosis and peripheral neuritis are the earliest and most reliable evidence of a B complex deficiency. All patients selected for study gave a history of an inadequate diet and had one or more of such indefinite symptoms as weakness, nervousness, anorexia, irritability or vague digestive complaints. All these patients had been ambulatory and, for the most part, carrying on their usual duties. None of them had any organic disease. There were 26 patients who were classified clinically as having a vitamin deficiency. The following studies were conducted: history, evaluation of the diet, physical examination with a neurologic consultation, blood count, total proteins, urinalysis, gastric analysis, proctoscopy and gastroscopy, ileal studies, stool fat, prothrombin time, slit lamp examination of the eyes, glucose tolerance test and determinations of vitamins A and C, carotene, nicotinic acid, riboflavin, thiamine, pyridoxine and pantothenic acid. None of the patients were found to have clinical evidence of a vitamin A deficiency; that is, there were no eye changes, night blindness or follicular keratosis. Ten patients in the deficiency group had vitamin A levels below the suggested lower limit of normal, and 7 patients had carotene levels which fell below this lower limit. Although pyorrhea was seen frequently, spongy bleeding gums, characteristic of scurvy, were not observed. There were no petechiae and the tourniquet test was negative. There were 7 patients in the deficiency group whose blood level was below the suggested lower limit of normal, 5 of whom had no measurable vitamin C in the plasm. All patients classified as having a vitamin deficiency had clinical evidence of a B complex deficiency with one or more of the following physical findings: glossitis, papillary atrophy, cheilosis or peripheral neuritis. A comparison of the vitamin levels of the B complex in those with signs of deficiency and in the normal controls revealed striking differences between the two groups in the urinary excretion levels of nicotinic acid, riboflavin and thiamine. The greatest variations were found in the nicotinic acid levels. The levels for pyridoxine showed no significant variation between the normal controls and the vitamin deficiency group. This suggests that in deficiencies of the B complex a pyridoxine deficiency is not likely to occur.

## Georgia Medical Association Journal, Atlanta

**33**:355-400 (Dec.) 1944

Surgery of Spleen. L. W. Grove.—p. 355.
Modern Treatment of Empyema. T. C. Davison.—p. 360.

## Illinois Medical Journal, Chicago

**86**:237-292 (Nov.) 1944

Recognition and Management of Surgical Lesions of Sigmoid and Pelvic Colon. J. A. Wolfer.—p. 249.
Practical Points in Recognition and Management of Coronary Disease. O. P. J. Falk.—p. 255.
Vitamin Requirements in Infants and Children. J. R. Vonachen.—p. 258.
Recognition of Atypical Pneumonia. F. B. Lusk and E. K. Lewis.—p. 263.
Results of Surgical Treatment of Acute Congestive Glaucoma. P. C. Kronfeld and H. Isabelle McGarry.—p. 269.
Chronic Brucellosis, Public Health Problem. E. Lehr.—p. 272.

**86**:293-334 (Dec.) 1944

Outlet Contraction, with Especial Emphasis on Typical Funnel Pelvis. R. F. Campbell.—p. 302.
Nasal Medication. N. D. Fabricant.—p. 310.
Mesenteric Thrombosis with Postoperative Administration of Dicumarol. P. F. Fox.—p. 314.
Falciparum Malaria. V. D. Thomas.—p. 316.
Phenobarbital Poisoning: Case. W. D. McNally and M. Horwitz.—p. 317.
Gunshot Wound Involving Upper Abdomen and Left Kidney. J. D. O'Connor.—p. 318.

## Iowa State Medical Society Journal, Des Moines

**34**:487-532 (Dec.) 1944

Anesthesia for the Woman About to Deliver. Edith E. Thompson and S. C. Cullen.—p. 487.
Pathogenesis of Congestive Heart Failure. B. F. Wolverton.—p. 490.
Dermatitis Medicamentosa from Intravaginal Use of Floraquin. L. E Gaul.—p. 493.

## Journal of Lab. and Clinical Medicine, St. Louis

**29**:1211-1324 (Dec.) 1944

Studies in Human Inheritance: XXV. Is Homozygous Form of Multiple Telangiectasia Lethal? L. H. Snyder and C. A. Doan.—p. 1211.
Sympatholytic Treatment of Experimental Hypertension. J. Jacobs and F. F. Yonkman.—p. 1217.
Toxicity of Yohimbine Hydrochloride. F. F. Yonkman.—p. 1222.
*Nutritional Macrocytic Anemia in Patients with Pellagra or Deficiency of Vitamin B Complex. C. V. Moore, R. Vilter, V. Minnich and T. D. Spies.—p. 1226.
Propylene Glycol as Menstruum for Administration of Steroid Hormones. T. H. McGavack and Mildred Vogel.—p. 1256.
Practical Method for Determination of Blood Volume with Dye T-1824. M. I. Gregersen.—p. 1266.

**Macrocytic Anemia in Pellagra.**—Moore and his associates investigated 56 patients with macrocytic anemia observed in the Nutrition Clinic of the Hillman Hospital. These patients had existed for years on diets inadequate in animal protein and in the vitamins of the B complex. Most of the subjects had clinical evidence of pellagra, ariboflavinosis or beriberi. In 25 the red blood cell count ranged from 1 to 3 million cells. Males predominated in a ratio of 3 to 1, and most of the patients were older than 50 years of age. Clinical manifestations were weakness, pallor, glossitis and intermittent or persistent diarrhea. The skin either showed the presence of pellagrous dermatitis or was rough, hyperpigmented and dry. The peripheral blood and bone marrow were cytologically indistinguishable from those of addisonian pernicious anemia. Free hydrochloric acid was found in the gastric contents of 16 patients at the time they were first studied; in 5 others, free acid was found on subsequent examination. All of the subjects showed (1) prompt

therapeutic response to the parenteral injection of highly purified liver extracts and (2) reticulocyte rises when fed beef muscle, and 80 per cent alcoholic extract of beef muscle or crude liver extract. When the oral administration was prolonged, the red blood cells also increased in number. The anemia is probably caused by a dietary deficiency of extrinsic factor associated in many, but not all, instances with poor absorption from the intestinal tract. Inadequate production of intrinsic factor is probably also a contributing influence. Thiamine, niacin, riboflavin, calcium pantothenate, pyridoxine, inositol, para-aminobenzoic acid and choline given together both orally and parenterally did not affect the erythropoietic equilibrium.

## Journal-Lancet, Minneapolis

**64**:395-424 (Dec.) 1944

Urinary Infections in Childhood. H. F. Helmholz.—p. 395.
External Steinmann Pin Fixation of Intertrochanteric Fractures. R. E. Jernstrom.—p. 398.
Symptom of Headache. L. R. Boies.—p. 400.
Usefulness of Various Anesthetic Agents in General Practice. J. S. Lundy, R. C. Adams and T. H. Seldon.—p. 405.
Congestive Heart Failure. D. L. Kegaries.—p. 407.
Cold Pressor Test. R. L. Todd.—p. 410.
*Clinical Studies of Influenza Epidemic. E. L. Shrader.—p. 413.
Recent Advances in Isolation and Identification of Influenza Virus. R. O. Muether.—p. 418.
Relief of Hypertension by Mechanotherapy. S. Quisling.—p. 420.

**Clinical Studies of Influenza Epidemic.**—Shrader presents the clinical characteristics of an outbreak of an acute febrile disease with generalized symptoms which occurred and spread with explosive rapidity among the 508 members of two companies of the A. S. T. Unit at St. Louis University in November 1943. Members of Companies A and B had returned from furloughs by the night of November 7. On the morning of November 9 a man from Company B reported to sick call with the clinical picture of what in the previous weeks had been diagnosed as influenza. On the morning of November 10 a man from Company A reported to sick call with a similar clinical picture. On November 12, 32 men with this disease reported to the student health service throughout the day; 25 of the 32 cases were from Company A. With the hope that the spread of the disease might be restricted, Company A was quarantined on the night of November 12. On November 13 there were only 6 new cases, but on November 14 there were 36 new cases (14 in A and 22 in B). This rapid spread in both companies suggested a disease of very short incubation period. The author believes that the disease was spread primarily by class groups and secondarily through building associations and contacts. The disease was highly infectious, with an incidence of as high as 49.1 per cent in one class group and 44.4 per cent in one building. Infectiousness persisted in the postfebrile period for about three days. The incubation period was probably between twenty-four and forty-eight hours. The disease had a four day febrile course without local signs, local symptoms or complications. Because of the short incubation period, the high degree of infectiousness, the freedom from symptoms during the early invasion period and the presence of subclinical cases, the most effective method of control seemed to be case finding inspections twice daily. These inspections consisted of taking temperatures, observing the men and questioning them as to their well being. All men with fever or those who felt ill were either hospitalized or isolated for further observation. The case finding inspections were continued from November 15 to November 22, during which time all activities in both companies were suspended and the men were restricted to their building areas. The duration of the disease and the degree of illness were effectively lessened by early discovery and prompt rest. No other form of treatment seemed to have any effect.

## Journal of Thoracic Surgery, St. Louis

**13**:445-532 (Dec.) 1944

Etiology of Cerebral Abscess as Complication of Thoracic Disease. J. L. Collis.—p. 445.
Hydatid Cysts of Lung. L. R. Davidson.—p. 471.
Surgical Ligation of Patent Ductus Arteriosus Associated with Aneurysm of Pulmonary Artery: Report of Successful Case. J. W. Nixon. —p. 513.
Transthoracic Gastric Surgery, with Report of Transthoracic Resection of Diverticulum of Stomach. D. L. Paulson.—p. 518.

## Michigan State Medical Society Journal, Lansing

**43**:937-1032 (Nov.) 1944

What People of Michigan Think of Medicine. J. F. Hunt.—p. 981.
Primary Atypical Pneumonia. A. A. Applebaum and C. E. Hufford. —p. 989.
What Modern Army Health Service Should Be. J. C. Meakins.—p. 979.

**43**:1033-1134 (Dec.) 1944

Neuropsychiatry and General Practitioner. W. C. Menninger.—p. 1069.
Gastroscope as Aid to Diagnosis. A. R. Hufford.—p. 1076.
Surgical Treatment of Gallbladder Disease. M. M. Zinninger.—p. 1082.

## Military Surgeon, Washington, D. C.

**95**:441-536 (Dec.) 1944. **Partial Index**

Experience of Medical Division of U. S. Naval Base Hospital No. — for Its First Year of Operation. S. A. Overstreet and H. B. Yeatts. —p. 441.
*Peptic Ulcer and Nutrition. G. Cheney.—p. 446.
Pilonidal Sinus: Indications for Treatment in Military Service in Time of War. H. Rogers.—p. 454.
Meningococcemia: Report of 5 Sporadic Cases. J. M. Hayman Jr.— —p. 457
Peritonsillar Abscess: Plan for Conservative Treatment. A. B. Berkove. —p. 462.
Management of Ankle Fractures and Fractures of Long Tibial and Fibular Shafts at Station Hospitals and in Battle Casualty Stations. N. J. Giannestras.—p. 474.
Psychiatric Aspects of Gastrointestinal Complaints of Soldier in Training. L. Pulsifer.—p. 481.
Bismuth Stomatitis During Treatment of Syphilis in Army. S. S. Silverman.—p. 486.
Psychologic Testing Program in Army Station Hospital. E. D. Greenwood, H. L. Snider and M. M. Seneti.—p. 489.
Portable Plaster Spica and Thomas Splint Traction for Treatment of Fractured Femur. C. C. Johnston.—p. 495.
Dermatophytids: Allergic Manifestation. S. S. Rubin.—p. 497.
Use of Procaine Hydrochloride with Intramuscular Administration of Penicillin Sodium. W. F. Shannon and E. L. Zielinski.—p. 501.
Sulfosalicylic Acid Blood Filtrate and Determination of Sulfathiazole and Sulfanilamide and Sulfadiazine. F. S. Schlenker.—p. 503.
Shoe Dermatitis Among Soldiers.—p. 505.
*Problem of Diagnosis and Treatment of Early Hepatic Cirrhosis. J. W. Johnson.—p. 507.
Cold Agglutinins in Respiratory Disease. A. M. Freedman and I. A. Mirsky.—p. 512.
Newer Concepts of Surgical Treatment of Varicocele. M. O. Zucker. —p. 515.

**Peptic Ulcer and Nutrition.**—Considerable evidence has accumulated that a dietary deficiency may play a part in the development of peptic ulcer. Cheney states that in many patients symptoms first appeared after being on canned rations, which included little or no fresh food for weeks or months. Meulengracht's dietary management makes use of the principle that a full diet will improve the patient more rapidly than a restricted one. In the production of experimental peptic ulcer in dogs it has been shown that the lesion is less readily produced if the dog is on a full diet than when the animal is on a restricted diet. In experiments with chicks it was found that dietary deficiency and cinchophen produced gastric ulcers which could be prevented or ameliorated by feeding a diet which contained an antigizzard erosion or antiulcer factor which has been designated as vitamin U. The effectiveness of a high caloric diet rich in this antiulcer factor was investigated in the management of a group of patients with peptic ulcer which had been recalcitrant to treatment. The dietary regimen was based on the usual convalescent ulcer diet with the addition of certain food substances known to contain the antiulcer factor. The diet included six eggs daily, two soft boiled for breakfast and four uncooked in eggnog between meals. Fifty Gm. of butter, 30 Gm. of peanut butter, 30 cc. of olive oil and certain fresh greens also were included. The patients also received one helping of tender meat and orange juice and tomato juice daily. The liberal diet made no patient worse, and the omission of the drugs did not aggravate the patients' symptoms. Two thirds of the patients were completely relieved, and 27 of the 31 patients were clearly benefited. The patients represent a small number of cases of therapeutic failures encountered in a large series of ulcer patients treated by the usual medical management, and consequently the successful results must be considered exceptional. This group of 31 patients represents but 7.4 per cent of the 418 ulcer cases observed, and it is just this group

which has so frequently been operated on in the past. It is recognized that defective nutrition is but one factor of several which may lead to the precipitation of symptoms of peptic ulcer, but it would seem that it might be an important one.

**Early Hepatic Cirrhosis.**—Johnson says that a relative increase in globulin may be expected in the majority of patients with early cirrhosis of the liver. Other diseases which exhibit alteration in the serum proteins must be considered in the differential diagnosis. He reports 5 cases with definite evidence of increase in globulin, symptoms of liver dysfunction and decreased hippuric acid excretion. These cases are probably illustrative of early hepatic cirrhosis, in which stage adequate treatment is most effective. A high carbohydrate, high protein and low fat diet with extra vitamins has caused great symptomatic improvement.

## North Carolina Medical Journal, Winston-Salem

**5**:577-636 (Dec.) 1944

Our Debt to the Aging. W. S. Bainbridge.—p. 577.
Art of Geriatric Practice. M. W. Thewlis.—p. 580.
The Aging Person: Psychologic and Psychopathologic Aspects of Aging. O. Diethelm.—p. 583.
Functional Personality Disorders in the Aging. E. B. Allen.—p. 585.
Occurrence and Treatment of Delirious Reactions in the Aging. E. J. Doty.—p. 591.
Pancreatitis in Older Patients. W. M. Johnson and O. T. Davis.—p. 595.
Prevention of Anesthetic Complications. D. L. Burdick.—p. 600.
Senile Patients in State Hospital at Morgantown. L. G. Beall.—p. 603.

## Public Health Reports, Washington, D. C.

**59**:1575-1602 (Dec. 8) 1944

*Fluoride Domestic Waters and Systemic Effects: II. Fluorine Content of Urine in Relation to Fluorine in Drinking Water. F. J. McClure and C. A. Kinser.—p. 1575.

**Fluorine Content of Urine in Relation to Fluorine in Drinking Water.**—McClure and Kinser found that where domestic waters are free of fluorine the fluorine present in urine averages 0.3 to 0.5 part per million. An increase of fluorine in the urine was associated with the use of domestic waters containing as little as 0.5 part of fluorine per million. Fluorine in urine specimens continues strikingly proportional to the fluorine content of the drinking water through the range of 0.5 to 5.1 parts of fluorine per million in the domestic water. The results furnish additional evidence of the importance of water borne fluorine as a source of fluorine in human diets. The data agree with previous epidemiologic studies which have demonstrated a striking relation between fluorine in communal water supplies and dental health, including reduced incidence of dental caries in 12 to 14 year old children. The close correlation between fluorine in drinking water and the fluorine content of urine suggests that the presumed hazard of cumulative toxic borne fluorosis surrounding certain water borne sources of fluorine in the United States is greatly reduced by this relationship. An efficient urinary elimination of fluorine appears to be characteristic of persons residing in certain fluoride areas of the United States where the drinking water contains 0.5 to 5.0 parts of fluorine per million. The metabolism of fluorine under these conditions seems to be a normal function of the human body and seems characterized by a condition approaching metabolic equilibrium, at least in the adult organism.

## Texas State Journal of Medicine, Fort Worth

**40**:355-402 (Nov.) 1944

Tumors of Blood Vessels. A. P. Stout.—p. 362.
Tumor Seminar. A. P. Stout.—p. 366.

**40**:403-458 (Dec.) 1944

Tropical Diseases in Texas in Postwar Era. J. A. Greene and W. M. Fischer.—p. 408.
Report of 1943 Outbreak of Poliomyelitis. S. W. Bohls and J. V. Irons.—p. 412.
Nephrosis: Its Management with Plasma. C. B. Shuey.—p. 417.
Calcium and Phosphorus Metabolism as It Relates to Clinical Pediatrics. R. G. Daggs.—p. 420.
Surgery of Intracranial Aneurysms. J. Greenwood.—p. 423.
Report of Case of Teratoma of Liver in Infant. S. M. Yarbrough.—p. 426.
Tuberculosis Among Medical School Personnel. W. S. Wallace.—p. 428.
Rubeosis Iridis Diabetica. R. S. Scobee.—p. 432.
Proposed Tuberculosis Plan for Texas. G. W. Cox.—p. 436.
Less Sickness Risk for Texans. C. D. Leake.—p. 438.

## Western J. Surg., Obst. & Gynecology, Portland, Ore.

**52**:491-534 (Dec.) 1944

Gonadotropins and Antihormone Problem. J. H. Leathem and A. R. Abarbanel.—p. 491.
Recent Advances in Treatment of Peripheral Vascular Diseases. G. E. Jones.—p. 494.
New Treatment for Microcystic Ovaries by Use of Diethylstilbestrol. K. J. Karnaay.—p. 507.
Osteomyelitis of Sacrum Complicated by Pregnancy. S. P. Seaberg.—p. 517.
*Prevention and Treatment of Postpartum Fissured Nipples with Local Applications of Vitamin A and D Ointment. J. C. Brougher.—p. 520.

**Treatment of Fissured Nipples with Vitamin A and D Ointment.**—During two years of study, a group of 100 postpartum patients who complained of pain and tenderness of the nipples, with or without grossly demonstrable fissures, were treated with local dressings of vitamin A and D ointment; a second group of 200 postpartum women had regular prophylactic dressings of vitamin A and D ointment applied to the nipples immediately after delivery and throughout the puerperal period; a third group of 200 postpartum patients had routine prophylactic care of the nipples with local measures other than vitamin A and D ointment. It was found that the use of vitamin A and D ointment in the local care of the puerperal nipple gave protective and therapeutic results much better than those obtained by other methods.

## Yale Journal of Biology and Medicine, New Haven

**17**:351-426 (Dec.) 1944

*Neostigmine in Acute Anterior Poliomyelitis. M. S. Eveleth and A. J. Ryan.—p. 351.
Synergic Activity of Staphylococcus Toxin. Harriet C. Marsh.—p. 359.
Inactive Cell Base and Measurement of Changes in Cell Water. J. R. Elkinton, A. W. Winkler and T. S. Danowski.—p. 383.
Case of Hermaphroditism in the Mouse. Elizabeth Fekete and Louise B. Neuman.—p. 395.
Union and Separation of Living Tissues as Influenced by Cellular Differentiation. H. Burrows.—p. 397.

**Neostigmine in Acute Anterior Poliomyelitis.**—Eveleth and Ryan report 200 cases of acute poliomyelitis in the New Haven Hospital from June through November 1943. They felt justified in trying neostigmine. The Kenny method was used in the treatment of all patients. Twelve patients in the early stages of the disease received neostigmine as an additional form of therapy. The 12 patients all showed severe spasm of the back muscles and hamstrings, and 10 of these had some paralysis in the legs. The average period from the onset of symptoms until neostigmine was given was eighteen days, and the patients averaged two weeks of the Kenny treatment during this period. The procedure was as follows: 1. The range of passive motion of the involved extremity was measured by means of the goniometer. 2. A subcutaneous injection of neostigmine methylsulfate was given. 3. The range of motion was again measured after one hour. 4. Routine Kenny treatment was then resumed. 5. Neostigmine was given orally three times a day for twenty-eight days. 6. The range of passive motion was measured for the third time. The doses of neostigmine and of atropine given were approximately the same as those used by Kabat and Knapp. There was a definite relief of muscle spasm, as indicated by an increased range of passive motion, in the lower extremities following the initial subcutaneous injection of neostigmine methylsulfate. This decrease in spasm occurred in all 12 patients and was recorded one hour after the injection. During this hour no packs were used. The difficulty in determining the effect of the oral administration of neostigmine on muscle spasm after the four week period is obvious. These patients might have had a decrease in muscle spasm without any therapy during this period, or the hot packs may have relieved the spasm. After a period of four weeks of neostigmine given orally there was, in general, little further decrease in spasm. Six of the 12 cases showed less spasm. The authors were not able to note the effect of neostigmine in contractures because their patients were all in the early stage of the disease. A period of about eight months has elapsed since this study was made and these patients have continued to receive the Kenny treatment without neostigmine. They have shown a gradual relief of muscle spasm and in most cases an improvement in muscle power. Whether or not this relief was facilitated by neostigmine is difficult to determine.

## FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### Annals of Rheumatic Diseases, London

**4**:1-28 (Sept.) 1944

"New Era" in Rheumatism Treatment. L. Horder.—p. 1.
Nodules and Lymph Gland Enlargement in Rheumatoid Arthritis: Also Syndrome of Rheumatoid Arthritis Combined with Multiple Xanthomatous Connective Tissue Infiltrations. F. P. Weber.—p. 3.
Observations on Natural History of Acute Rheumatic Fever. W. S. C. Copeman.—p. 11.
*Aspects of "Fibrositis." F. A. Elliott.—p. 22.
Case of Tuberculous Rheumatism (Grocco-Poncet Type). E. Montuschi. —p. 26.

**Fibrositis.**—Elliott shows that the conception of fibrositis introduced in its present form by Sir William Gowers in 1904 provided so ready an explanation for a number of otherwise knotty problems that it was and is widely accepted as a disease, although it has never been placed on a satisfactory pathologic basis. The skepticism born of this pathologic ambiguity is increased by the circumstances that many conditions formerly viewed as typical examples of fibrositis are now known to have other cause. Many cases of lumbago, sciatica and "brachial neuritis" are due to prolapse of the nucleus pulposus. Other cases of lumbago are examples of spondylolisthesis or the reverse condition of posterior displacement of the fifth lumbar vertebra. Nevertheless the aforementioned conditions are still frequently treated as fibrositis. From a review of personal mistakes of this type it appeared to the author that among the factors which contribute to this confusion the most common is the misinterpretation of tenderness as a physical sign. He shows that, apart from a hypothetical inflammatory origin, muscle tenderness may have two explanations. The first is the traditional one—a central lowering of threshold to sensory stimuli. The second is the effect of localized involuntary spasm arising reflexly from lesions elsewhere. This spasm is accompanied by an increased irritability and occurs in extensor muscles which are anatomically or physiologically related to the site of disease. Thus a prolapsed disk in the lumbar spine may give rise to spasm in the lumbar muscles and it may also cause spasm of muscle fibers in the buttock and calf by irritating the fifth lumbar root. Such spasm contributes pain to the patient's discomfort, and this may be relieved by measures taken to reduce the spasm. Such treatment is valuable, but the elimination of pain by local injections of procaine does not necessarily exclude a central lesion of the nerve roots or spinal column. This thesis does not seek to shut the door on fibrositis as a clinical entity. It would be unfortunate if the hypothesis of myofascial inflammation was to be replaced at this stage by a facile generalization that muscle tenderness is always due to spasm of skeletal muscle.

### British Journal of Ophthalmology, London

**28**:533-592 (Nov.) 1944

Unilateral and Bilateral Retinoblastoma: Possible Histologic Difference. J. N. Cumings and A. Sorsby.—p. 533.
Observations on Transparency of Conjunctiva. P. A. Gardiner.—p. 538.
Photographs of Retinal Detachment in Aphakia Before and After Operation. E. Rosen—p. 554.
Studies in Dark Adaptation as Means of Detecting Deficiency of Vitamin A. G. W. Robertson and J. Yudkin.—p. 556.
*Snake Venom Ophthalmia. H. Ridley.—p. 568.
Plastic Spheres for Implantation into Tenon's Capsules in Frost-Lang Type Operation for Enucleation of Eyeball. R. E. Wright.—p. 573.
Local Application of Penicillin Solution to Eye. R. E. Wright.—p. 574.
End Results of Operation for Detachment of Retina, with Follow-Up of 50 Successful Cases. M. L. Hine.—p. 575.

**Snake Venom Ophthalmia.**—According to Ridley, Naja nigricollis, the black necked cobra, is the common spitting snake, though other African cobras have to a less extent the power to eject venom. All these snakes are exceedingly poisonous. The author reports that a laborer aged 30, while cutting grass with a native scythe, discovered a snake. The reptile spat venom, some of which entered the right eye. About twenty minutes after the injury the man walked into the ophthalmic department of a hospital, accompanied by one of his colleagues carrying the decapitated snake, which was identified as a black necked cobra. The patient complained of considerable pain in the right eye. There was a moderate degree of conjunctival injection. The whole corneal epithelium was edematous. On the second day there was chemosis with a profuse mucoid discharge accompanied by edema of the lids. The lower half of the cornea was bare of epithelium, but sensation was absent. By the fifth day the cornea was completely covered by edematous, very loosely attached epithelium. Sensation was present, though much diminished. On the ninth day corneal sensation was normal but the bulla remained. On the fourteenth day the epithelium was normal and apart from the localized faint corneal opacity the eye had completely recovered. The interesting features of this case appear to be the prolonged corneal anesthesia, persisting for five to seven days, and the abnormal epithelial regeneration resembling the epitheliolysis of neuroparalytic keratitis or recurrent erosion. Cobra venom has been used as an analgesic, but little work has been done on the employment of venom in ophthalmology. The author suggests that a harmless substance capable of producing prolonged anesthesia of the anterior segment of the eye would be of considerable value in inflammatory conditions and after operations or other forms of trauma, and the styptic effect of viper venom might also have its uses.

### British Journal of Surgery, Bristol

**32**:109-224 (July) 1944. **Supplement**

Army Progress with Penicillin. L. T. Poole.—p. 110.
Principles of Penicillin Treatment. H. W. Florey and M. A. Jennings. —p. 112.
Bacteriologic Methods in Connection with Penicillin Treatment. L. P. Garrod and N. G. Heatley.—p. 117.
Application of Penicillin to War Wounds. J. S. Jeffrey.—p. 124.
Bacteriologic Examination of Wounds Treated with Penicillin. S. Thomson.—p. 129.
Treatment of Flesh Wounds by Early Secondary Suture and Penicillin. F. H. Bentley.—p. 132.
Early Closure of Soft Tissue Wounds with Chemotherapeutic Agents: Comparative Study of Sulfanilamide and Penicillin. J. J. M. Brown. —p. 140.
Battle Casualty Fractures in Italy: Treatment with Penicillin. J. S. Jeffrey.—p. 144.
Use of Penicillin to Control Infection in Open Fractures of Femur: Interim Report. R. Furlong and J. M. P. Clark.—p. 147.
Battle Casualty Fractures of Femur: Treatment with Penicillin. R. J. B. McEwan and J. G. Bickerton.—p. 154.
Gas Gangrene in Italy: Study of 33 Cases Treated with Penicillin. J. S. Jeffrey and S. Thomson.—p. 159.
Treatment of Clostridial Infections with Penicillin. E. C. Cutler and W. R. Sandusky.—p. 168.
Intrapleural Penicillin in Penetrating Wounds of Chest. W. F. Nicholson and C. R. Stevenson.—p. 176.
Penicillin in Treatment of War Wounds of Chest. A. L. D'Abreu, J. W. Litchfield and S. Thomson.—p. 179.
Penicillin in Head and Spinal Wounds. H. Cairns.—p. 199.
Observations on the Prophylactic Use of Penicillin in Wounds of Aerial Warfare. E. C. Cutler, P. C. Morton and W. R. Sandusky.—p. 207.
Penicillin Therapy in Gonorrhea: 1,000 Cases of Sulfonamide Resistant Gonorrhea and 100 Cases of Acute Gonorrhea Previously Untreated. J. N. Robinson.—p. 211.
Penicillin Therapy for Syphilis. C. R. Wise and D. M. Pillsbury. —p. 214.

### Lancet, London

**2**:553-584 (Oct. 28) 1944

Sulfonamide Dermatitis: Further Observations, with Special Reference to Treatment and Prevention. B. C. Tate and I. Klorfajn. —p. 553.
Dysentery in British Prisoners of War. H. Bloom.—p. 558.
Fatty Diarrhea in Chronic and Relapsing Dysentery. H. T. Howat. —p. 560.
Surgery of Varicose Veins. H. R. Arthur.—p. 561.
*Pulsator Treatment of Crush Injury. D. V. Marshall.—p. 562.
Sims Test. Mary Barton and B. P. Wiesner.—p. 563.
*Quinine Blindness. I. S. McGregor and A. Loewenstein.—p. 566.

**Pulsator Treatment of Crush Injury.**—Marshall reports 4 cases of crush injury in which unexpectedly good results were obtained with a respirator. As soon as possible after the diagnosis of crush injury had been made, the damaged limb or limbs were placed in the respirator and the pulsation mechanism was worked at the slowest rate for about half an hour. Four patients received treatment for this period every two or three hours in rotation. It was continued regularly, except during sleep, until the circulation of the affected parts seemed restored, as judged by the diminution of pain, return of warmth and color and loss of tension. They all recovered. The author concludes that the fatal result of crush injury may be prevented by prompt restoration of the circulation in the affected part by the use of a mechanical pulsator.

**Quinine Blindness.**—A man aged 37, who had developed malaria twelve years before in India and who often had had quinine without toxic effects except tinnitus and transient deafness, in a recent attack was given about twelve doses of 30 grains (2 Gm.) of quinine dihydrochloride in one day. He is now blind. McGregor and Loewenstein say that, if such unfortunate results are to be avoided, the view that quinine blindness is benign must be modified. The authors present evidence of damage to the retinal cells by quinine with the production of a scotomatous or "sievelike" field. The milky appearance of the retina is attributed to the ischemia produced by toxic swelling of the endothelium of the small vessels. Treatment is designed to effect early and vigorous fluid exchange—locally, by paracentesis of the cornea and emptying of the anterior chamber for the first few days, at least in one eye; generally, by purgation and copious drinks, intravenous saline solution and thecal drainage. The processes of oxidation in the retina should be facilitated by a generous intake of vitamin B complex and ascorbic acid. To avoid such catastrophes as blindness, quinine dosage should be cautious and the drug should be stopped at once if visual symptoms arise.

### 2:585-616 (Nov. 4) 1944

The Film in Medical Education: I. Planning. C. J. Longland and R. MacKeith.—p. 585.
Id.: II. Production and Scope. B. Stanford.—p. 588.
Carbon Tetrachloride Nephrosis. J. R. Forbes and M. D. Lond.—p. 590.
Segments and Blood Vessels of Lungs. A. B. Appleton.—p. 592.
Rh Antenatal Testing: Suggested Nomenclature. J. Murray.—p. 594.
Tetany After Extensive Gut Resection. J. A. Cosh.—p. 596.
Survival After Removal of Twenty Feet of Intestine. C. C. Holman. —p. 597.
Cellulitis Due to Hemolytic Streptococcus Type C. B. Portnoy and R. Reitler.—p. 597.
Rapid Test for Serodiagnosis of Syphilis. F. Rappaport and F. Eichhorn.—p. 599.

### 2:617-646 (Nov. 11) 1944

Social Medicine: An Academic Discipline and an Instrument of Social Politic. F. A. E. Crew.—p. 617.
*Micromethods of Estimating Penicillin in Blood Serum and Other Body Fluids. A. Fleming.—p. 620.
*Penicillin Content of Blood Serum After Various Doses of Penicillin by Various Routes. A. Fleming and M. Y. Young.—p. 621.
African Sleeping Sickness: Case. J. Grant, M. Anderson and R. B. Thompson.—p. 624.
Operation for Hydrocele. H. J. Croot.—p. 625.

**Micromethod of Estimating Penicillin in Blood Serum and Other Body Fluids.**—Fleming points out that there is no chemical test for penicillin in blood, but the concentration of this substance in blood serum can readily be estimated by titrating its bacteriostatic power on a suitable test organism. Since it is inadvisable to withdraw large specimens of blood when the withdrawal has to be repeated frequently, the author prefers microtitration, which has been constantly improved. The hemolytic streptococcus has been substituted for the staphylococcus as the test organism. Blood is used as the indicator, and for incubation of the test mixtures either slide cells or capillary tubes are used. The author gives detailed descriptions of the slide cell method and of the capillary tube method. Very consistent results are obtained by these methods, and when a series of observations is made at intervals following an injection of penicillin a regular curve is obtained.

**Penicillin Content of Blood Serum.**—Fleming and Young estimated the concentration of penicillin in the blood serum of patients who have been receiving the drug in various doses intravenously, intramuscularly or subcutaneously, either as single injections or as a continuous drip. In this way they acquired information as to the maximum height to which the penicillin content rose and as to how long an appreciable penicillin content was maintained after a dose. The curves are regular, which suggests that the method of test is reasonably accurate. These curves show that penicillin is very rapidly absorbed after intramuscular or a subcutaneous injection and that following the larger doses it can be detected in the blood for a considerably longer time than after the smaller doses. Penicillin appears in the blood within a few minutes of an intramuscular or subcutaneous injection; so from the point of view of getting the drug into the circulation quickly there is little to be gained by intravenous administration. At the same time there is little to be lost, for the rate of disappearance from the blood is not greatly different whether the injection is given intravenously or intramuscularly. The information obtained indicates the frequency with which doses should be given to maintain a bacteriostatic concentration in the blood over the whole period of treatment.

## New Zealand Medical Journal, Wellington

### 43:211-264 (Oct.) 1944

Use of Thiourea and Derivatives in Treatment of Thyrotoxicosis. C. E. Hercus and H. D. Purves.—p. 213.
Modern Industrial Toxicology. J. M. Davidson.—p. 218.
Penicillin in War Wounds. E. Button.—p. 225.
Food Compositions. E. B. Gunson.—p. 228.
*Prognosis in Schizophrenia. K. R. Stallworthy.—p. 230.
Spontaneous Common Sensory Phenomena With and Without Organic Lesions of Brain. I. M. Allen.—p. 233.
Early Diagnosis of Pulmonary Tuberculosis: Review of Cases Revealed in Recruits by Radiologic Examination. E. K. MacLeod.—p. 237.
Plan for General Practitioner Medical Service. J. B. Dawson.—p. 241.
Future of General Practice. D. Robb.—p. 248.

**Prognosis in Schizophrenia.**—Stallworthy thinks that schizophrenia is sufficiently common in general practice to make valuable some broad generalizations about its prognosis. Of 775 patients admitted to the Auckland Mental Hospital in 1939 and 1940, 196 were considered schizophrenic. The author investigated the outcome in these patients and found that if a patient develops a psychosis which fits the somewhat accommodating label of schizophrenia he has a remarkable chance of recovery. Forty-two per cent of schizophrenic patients admitted to the Auckland Mental Hospital are, after four years, discharged; some of them show intellectual and emotional blunting, but many are completely well. Seven per cent of the remainder are dead—scarcely a negligible mortality. In spite of occasional dramatic responses there is no unquestionable evidence that modern assaults on the cerebrum with convulsant drugs, electricity or the surgeon's knife materially improve the long term outlook in schizophrenia. In the Auckland Mental Hospital chief reliance is placed on the minimal emotional demands of an ordered institutional existence and the extraverting stimulus of occupational therapy. In a patient with schizophrenia, neither intellectual deficiency, a tainted family history, the occurrence of previous psychotic episodes, relatively long duration of symptoms nor type of illness is necessarily incompatible with recovery. If recovery is to occur, it is not to be expected for six to nine months.

## Khirurgiya, Moscow

### 3:3-21, 1944. Partial Index

*Latent Anaerobic Infection in Gunshot Wounds. L. A. Chernaya.—p. 3.
Vitamin K3 (Methyl Naphthaquinone) in Surgery. A. V. Palladin, T. M. Nodler and B. T. Khaykina.—p. 9.
Thrombin: Its Nature and Uses in Surgery. V. A. Kudryashov.—p. 12.
Neurohumoral Factors in Pathogenesis in Delayed Healing of Wounds. S. M. Leytes, P. M. Veger and E. T. Zlatopolskaya.—p. 17.
Ammonium Bicarbonate Treatment of Suppurating Wounds. T. F. Berezin.—p. 19.

**Latent Anaerobic Infection in Gunshot Wounds.**—Chernaya studied the anaerobic flora cultured from 159 bone sequestrums, 92 foreign bodies removed from old gunshot wounds and tissues from 34 reamputated stumps. Anaerobic flora was found in 16 of 34 reamputations, in 32 of 92 foreign bodies and in 39 of 159 bone sequestrums. The clinical course of the investigated cases did not differ from the usual and did not give any reason to suspect the presence of anaerobic microorganisms. The lapse of time between the sustaining of the wound and the bacteriologic investigation amounted to eight to ten months and in some instances to as long as fourteen to sixteen months. Clostridium welchi was found in 51 instances and Clostridium sporogenes in 43, while in 7 instances nonpathogenic anaerobes were demonstrated, in 5 Clostridium butyricum and in 2 Clostridium tetanoides. Other causative agents of gas infection, such as Clostridium oedematiens, Clostridium septicum, Clostridium histolyticum and Clostridium tetani, were not demonstrated in any instance. Seventy-five per cent of the strains of C. welchi have retained their virulence. Prolonged residence up to sixteen months of this organism in the body did not alter its cultural or pathogenic property. The author concludes that the satisfactory general state of a patient with an old gunshot wound does not exclude the possibility of a dormant latent anaerobic infection which may become activated by a new intervention.

# Book Notices

**Control of Pain in Childbirth: Anesthesia, Analgesia, Amnesia.** By Clifford B. Lull, M.D., F.A.C.S., Clinical Professor of Obstetrics, Jefferson Medical College, Philadelphia, and Robert A. Hingson, M.D., Surgeon, U. S. Public Health Service. With an introduction by Norris W. Vaux, M.D., Obstetrician-in-Chief, Philadelphia Lying-In Unit, Pennsylvania Hospital, Philadelphia. Cloth. Price, $7.50. Pp. 356, with 132 illustrations. Philadelphia, London & Montreal: J. B. Lippincott Company, 1944.

In this book the authors present two basic themes in the control of the pains of labor, namely the relief of pain by the encephalic approach, i. e. obliteration of pain at the site of interpretation, with general, intravenous, intramuscular and rectal forms of amnesia, analgesia and anesthesia, and by the anatomic approach through the obliteration of painful stimuli at their site of origin through various forms of regional, local and spinal anesthesia and caudal analgesia.

Because there is no single form of pain relief suited for every case, the authors have borrowed valuable information from other sources, particularly from John S. Lundy, C. O. McCormick and L. H. Maxson. In addition, special sections were prepared: on direct infiltration anesthesia in obstetrics by J. P. Greenhill, on parasacral, pudendal and infiltration anesthesia in obstetrics by B. E. Tucker and H. B. W. Benaron, on the technic of local anesthesia for cesarean section by Charles Gordon and on x-ray studies of the sacrum and sacral hiatus by P. A. Bishop.

Many subjects are covered in this book, including the anatomy of the organs of parturition, physiopharmacology of the general anesthetic, amnesic agents, paravertebral, peridural, regional, local, spinal, caudal and continuous caudal analgesia and anesthesia in obstetrics, psychology of the management of pregnancy and labor, history of pain relief in childbirth, technics for the relief of pain during labor and delivery, management of the third stage of labor, cesarean section, management of the puerperium, choice of the agent of pain relief in home obstetrics, control of pain in maternal complications and methods and drugs used in the resuscitation of the newborn.

The book is well written and contains numerous illustrations. Most of the illustrations, although borrowed from other sources, are highly instructive, particularly the unique illustrative charts prepared by D. Andrassy which graphically portray the depressive and stimulating actions of different drugs on maternal and fetal organs. At the end of each chapter is a useful bibliography. Regardless of whether or not one agrees with the authors in their enthusiasm for continuous caudal analgesia, all obstetricians and anesthetists can read this book with great benefit.

**Terapéutica ginecológica.** Por Carlos J. Calatroni, docente libre de clínica ginecológica (Buenos Aires), y Vicente Ruiz, profesor titular de clínica ginecológica (La Plata). Third edition. Cloth. Price, $45 M/Arg. Pp. 1,212, with 442 illustrations. Buenos Aires: Libreria y Editorial "El Ateneo," 1944.

This is a large and impressive volume. It is well printed, the style is good, it is easy to read and it is clearly and profusely illustrated. The majority of illustrations are original and many are in color. This work is the result of a lengthy association of the authors with students of clinical gynecology, both as instructors and as consultants. The aim has been to publish a book of gynecologic therapeutics dedicated especially to the general physician. For each gynecologic disease the authors have summarized its essential anatomopathologic lesions, its symptomatology and its diagnosis, thus laying a foundation for the most suitable therapy.

The volume discusses the normal menstrual cycle, anomalies of the menstrual cycle and treatment of pseudoamenorrhea, amenorrhea and dysmenorrhea, metropathia hemorrhagica, genital hemorrhage, abortion, ectopic pregnancy, genital discharges, gonorrhea, myoma, ovarian tumors, endocrine and nonendocrine ovarian insufficiency, genital hypoplasia, genital tuberculosis, pelvic sepsis, hydatidiform mole, chorionepithelioma, endometriosis, uterine displacement and prolapse, genital echinococcus, genitourinary fistulas and carcinoma of the vulva, vagina, cervix uteri and endometrium, and gynecologic radium therapy.

The full series of the League of Nations cancer of the cervix classification is shown in color plates. This will aid in the more accurate classification of cancer of the cervix. The fullest possible dissemination of such knowledge among general practitioners will bring the recognition and treatment of cancer of the cervix patient to a higher level than has at present been attained. The authors are to be commended for placing this classification in such a widely distributed, easily available textbook.

Chapters dealing with menstruation and its anomalies are long and thorough. The authors have presented the subject thus deliberately, believing that a more efficacious treatment of menstrual disorders should be given by the general practitioner. Rectal gonorrhea is discussed in some detail, since the bibliography in Spanish on this subject is extremely scanty and since it constitutes an only moderately known localization of the organism.

In all chapters theoretical discussions, the listings of hypotheses and bibliographic citations have been carefully avoided. The authors have presented the most acceptable current opinion as taught in the gynecologic clinics of Buenos Aires and La Plata. They have offered a practical point of view to the general physician and a fund of facts which in Spanish can be found only scattered through pamphlets and publications not always within his reach.

The most recent advances of gynecologic thought, the use of chemotherapy in infections, the fuller knowledge of endocrine functions and the use of artificial estrogens are included.

The chapters on neuropsychiatry in gynecology and on diet are new with this edition. For the notes on the mental impact of gynecologic disease the authors are to be particularly commended. This chapter was contributed by Dr. Jorge Thenon. The chapter on diet was written by Dr. Landebure.

Dr. Rudolpho Sammartino prepared the anatomopathologic specimens, from which Mr. Julio Rodriquez revised the prescriptions which accompany the text. Dr. Juan C. Ahumado, titular professor of clinical gynecology in the faculty of medical sciences of Buenos Aires, wrote the preface and gave his approval of the material herein presented.

**Surgery: A Textbook for Students.** By Charles Aubrey Pannett, B.Sc., M.D., F.R.C.S., Professor of Surgery, University of London. Cloth. Price, 35s. Pp. 740, with illustrations. London: Hodder and Stoughton, Ltd., 1944.

Much of the glamour and enthusiasm which accompany the first appraisal of any new book is lost in this case. The war effort is no doubt responsible for the quality of paper and binding used in this volume. However, the subject matter which it contains soon reveals its true worth. The author has made excellent use of a small number of illustrations and diagrams. They are of prime importance in any textbook on surgery, especially when it is written for students. The individual topics are well segregated in the text. This makes for a clearer understanding and a clearer reference availability.

It is unusual for one writer to attempt to cover the entire subject of surgery. This may result in the presenting of only one view on a controversial subject. The student especially should know that there are other and good methods and procedures in surgery. The disparaging remarks made concerning the use of the McBurney incision in appendectomies is an example. The substitute incision offered might not be so successful in other hands. The statement concerning the frequency with which chronic ulcers of the stomach are found on the posterior wall would be questioned by some. Radium alone as a treatment for carcinoma of the breast except in well advanced cases would be questioned.

Scrubbing the wound with soap and water is not sanctioned by the author in cases of compound fractures. This procedure is used by many surgeons who feel that irrigation of the wound with sterile saline solution in large quantities removes the danger of contamination which may have been carried into the wound. Infection from drinking water being considered as a factor in the production of goiter is not in agreement with the current opinions as to the cause of pathologic conditions of the thyroid.

In the discussion of bowel obstruction and resection, instruction as to the benefit of the Wangensteen constant suction appa-

ratus and the Miller-Abbott tube would be of great value. More reference to the value of the sulfonamide drugs and penicillin in combating various infections, especially gonorrhea, would be appreciated in a publication appearing at this time. The author's methods of treating fractures of the femur have shown excellent results among war casualties. The outline of the text to follow which is placed at the beginning of some of the chapters is especially helpful. A textbook of this recent date could well include some mention of the Rh factor in blood groupings and transfusions. The absence of a discussion of pathologic and physiologic processes in reference to surgery is noticed. The omitting of surgical consideration of the ear, nose and throat specialty and of gynecology is explained on the basis of their being too technical for a general surgeon.

The book fulfils its purpose as a textbook for students: it gives valuable information on many subjects.

**The South African Frog (Xenopus laevis) in Pregnancy Diagnosis.** By Abner I. Weisman, M.D., Adjunct Gynecologist, Jewish Memorial Hospital, New York, and Christopher W. Coates, Aquarist, New York Zoological Society. Aided by a Grant from the New York Biologic Research Foundation, New York. {Including} Supplement: Queries Relating to Xenopus laevis. Cloth. Price, $2. Pp. 134, with 47 illustrations. New York: New York Biologic Research Foundation, 1944.

This monograph gives a concise exposition of the life of the South African frog and its care for laboratory use in the diagnosis of pregnancy. However, almost half of the volume is taken up with the historical account of the recognition of the importance of this frog in scientific studies and its geographic distribution as well as its life cycle and habits. This section should be of interest to zoologists and laboratory caretakers who require this information for the proper sustenance of normal frogs. The latter part of the volume is of value to clinicians because of the use of this type of frog for pregnancy diagnosis as well as for the pathology of pregnancy (hydatidiform mole, chorioepithelioma) and endocrinopathies. The test is simple and has a high degree of accuracy (98-99 per cent). The only difficulty in using this test is the care of the frogs, because they require special consideration as to proper temperature, water changes, tank space, frequent cleansing and proper isolation with the first appearance of any disease condition. In good laboratories all these requirements can be met; nevertheless these frogs are not as hardy as mice, rats or rabbits for the pregnancy tests in this country. The American frog (Rana pipiens) is unsuitable for the pregnancy test.

The advantages of the Xenopus frog test are that the test is speedy (six to twelve hours), the test is accurate (98 to 99 per cent), the test is simple to perform, requiring one single subcutaneous injection, the frogs are easy to maintain, according to the author, the test is inexpensive since the animals can be used repeatedly, and the end reaction is the simple observation of eggs in water. The great value of the test is in ectopic pregnancy when speedy and accurate pregnancy diagnosis is imperative. This little book is well written and therefore easily read. It has much information about Xenopus levis, its value to laboratory investigations, the comparative study of the various pregnancy tests and the use of the frog in pharmacologic as well as endocrine studies. An interesting supplement contains questions directed to workers with a new test and the answers.

**A Laboratory Manual of Physiological Chemistry.** By D. Wright Wilson, Benjamin Rush Professor of Physiological Chemistry, University of Pennsylvania, Philadelphia. Fifth edition. Cloth. Price, $2.50. Pp. 269. Baltimore: Williams & Wilkins Company, 1944.

As Dr. Wilson's preface states, this is a teaching manual in the laboratory practice of physiologic chemistry and not a comprehensive reference book. An introductory section comprises experiments illustrating fundamental chemical laws and those aspects of the organic chemistry of carbohydrates, fats and proteins important to the biochemist. The second section of the book contains experiments concerned with the chemical nature of body tissues and fluids and includes the material on qualitative and quantitative blood and urine analyses usually taught in medical courses in biochemistry. There are also a number of experiments designed to demonstrate the various dietary deficiencies in laboratory animals. The alternate pages of the book have been left blank so that the manual can be used as a laboratory notebook. The practical and continued value of the manual is attested by this being the fifth edition.

**Hypertension and Hypertensive Disease.** By William Goldring, M.D., Associate Professor of Medicine, New York University College of Medicine, New York City, and Herbert Chasis, M.D., Assistant Professor of Medicine, New York University College of Medicine. Cloth. Price, $3.50. Pp. 253, with 53 illustrations. New York: Commonwealth Fund; London: Oxford University Press, 1944.

The authors of this book are definitely committed to the view that so-called essential human hypertension is not primarily of renal origin. They believe that the initial cause of this type of hypertension is some unknown humoral agent which brings about the generalized vasospasm that determine the elevation of blood pressure. The organic vascular disease, including the intrarenal and generalized arteriolosclerosis so frequently found in association with essential hypertension, they consider to be secondary to the same humoral mechanism that initiates the hypertension. They admit that even in man hypertension may be of renal origin, but only when the renal disease is known to be primary. The renal vascular disease of essential hypertension they do not regard as primary. The various arguments, including the evidence presented by the recent work on experimental renal hypertension, now adduced in favor of the primary renal origin of human hypertension, fails to convince these authors, even though they themselves have shown that the only changes seen in early human essential hypertension are disturbances of renal hemodynamics and excretion. These changes they attribute to efferent glomerular arteriolar spasm, which they consider part of the generalized vasoconstriction initiated by the unknown humoral mechanism. This book is an important contribution to the literature on human hypertension. It deals largely with the work of Homer W. Smith and his collaborators, in which the authors are included. Both the body of the book and the appendix give full details about their views, methods and important contributions to the study of renal hemodynamics and excretion. Included are excellent chapters on the surgical and medical treatment of human hypertension giving full details about the management of the patient with this condition.

**The Microbiology of Foods.** By Fred Wilbur Tanner, Ph.D., D.Sc., Professor of Bacteriology and Head of the Department, University of Illinois, Urbana. Second edition. Cloth. Price, $12.50. Pp. 1,196, with 5 illustrations. Champaign: Garrard Press, 1944.

The extensive compilation of information on the relationship of micro-organisms to foods as found in this edition attests the competence of the author in this field. The early chapters present the fundamentals of food preservation and a detailed discussion and classification of the organisms found in foods. Following this the author considers the microbiology of fresh and canned foods, including water. For each food there is extensive coverage of the subject with respect to normal flora of food, use of microbes in food processing, spoilage action and consideration of methods used to combat spoilage. Disease transmission is discussed where this possibility exists. There is a wealth of technical information throughout on methods for bacteriologic examination, identification of organisms and preparation of culture mediums. Official standards of purity and methods of examination are included where these exist. One section is devoted to the microbiologic assay of foods for vitamin content. The book serves an excellent purpose as a source of detailed technical information on facts and methods. It is a valuable reference source on the broad subject covered by its title, since nearly all facts quoted are supported by references, most of which are recent, and bibliographic lists follow each chapter. Its usefulness should be greatest in the teaching of technical courses dealing with food handling and in industrial food laboratories.

**A Study of Variations in Output.** By S. Wyatt. Assisted by R. Marriott, W. M. Dawson, D. E. R. Hughes and F. G. L. Stock. Medical Research Council, Emergency Report No. 5 of The Industrial Health Research Board. Paper. Price, 4d. Pp. 16. London: His Majesty's Stationery Office, 1944.

This report confirms the opinion of previous investigation that reduction in hours of work affects hourly output favorably. However, great care must be exercised in interpreting results. Many additional factors must be considered, and of these technical improvements and reorganization of work are the most important elements leading to improved efficiency. The workers appreciate shorter hours, especially women with home responsibilities.

# Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

## BASOPHILIC AGGREGATION TEST FOR LEAD EXPOSURE

***To the Editor:*—In one of our war plants about 12 employees were overcome by fumes from solder. Can you supply any information about the McCord test?**
**M.D., Illinois.**

ANSWER.—Preferably termed the basophilic aggregation test, the procedure mentioned finds its most useful application as a screening measure in the detection of lead absorption and lead poisoning suspects in group examinations. However, it may be used in individual examinations. Any one exposed to lead who presents the subsequently mentioned blood elements in excess of 1.5 to 2 per cent should be suspected as having lead absorption or lead poisoning. In the usual early lead poisoning the percentage ranges from 3 to 6 and exceptionally as high as 15. This test is not diagnostic. In the newborn, in various anemias, in early benzene poisoning, possibly in early arsenic poisoning and sometimes after extensive exposure to sunlight or to artificial ultraviolet light the test may be positive. In long standing lead poisoning and in the presence of lead sequelae the test will not be positive.

The basis of the test is the enumeration of all red blood cells containing basophilic material, that is, preformed stipple cells, reticulocytes and red cells containing diffuse basophilic substances seen as polychromatophilic cells as stained with a Romanovsky stain. The staining procedure seeks to obtain laking of the red cells but leaving behind, within the cell form, clumped basophilic material which is much more visible under the microscope than the diffuse basophilic material as seen in a polychromatophilic cell. The stain used is:

| | |
|---|---|
| Sodium borate | 1.0 Gm. |
| Methylene blue | 2.0 Gm. |
| Distilled water (boiling) | 100 cc. |

The sodium borate is dissolved in the boiling distilled water and to this is added the methylene blue. After filtering, this stain is ready for use and provides a stable, satisfactory and uniform stain for at least two weeks. If used for long periods, a progressive formation of precipitate may appear.

For reasons unknown, not all batches of this stain prove satisfactory. Experience has shown the necessity of working on a trial and error basis. Apparently, best results depend on a highly critical $p_H$ value, but this value has not been standardized.

In carrying out this test, one or more thin blood smears are made on the usual microscopic slide. After air drying, one half of the smear longitudinally is overlaid with a strip of filter paper, after which this is carefully wet with a small amount of methanol for fixation. This remains in place until dry. The remaining half is unfixed. Staining is then carried out, the staining time varying with different batches of stain and ranging from thirty seconds to ten minutes. Apparently, overstaining does not occur. After staining, the preparation is gently washed in distilled water in order not to remove the unfixed cells. After air drying, counting is carried out avoiding the boundary between the fixed and the unfixed portions. Customarily the total number of the stained cells in the fixed portion of the slide are counted in five high powered microscopic fields (× 4). Then the basophilic aggregations showing up as fine or coarse skeins or as clumps of unnetted basophilic material are counted in twenty fields of the unfixed portion. The percental relationship between these total numbers is then established. In healthy adults the percentage of basophilic aggregations usually ranges from 0.3 to 1.3, less frequently to 1.5. In industry a team of three persons may make four hundred of these tests daily without difficulty. Reference:

McCord, C. P.; Holden, F. R., and Johnston, Jan: Basophilic Aggregation Test in the Lead Poisoning Epidemic of 1934-1935, Am. J. Pub. Health **25**: 1089 (Oct.) 1935.

## CANCER OF RECTUM

***To the Editor:*—Are statistics available as to the length of survival, without operation, of patients on whom an established diagnosis of primary carcinoma (adenocarcinoma or squamous) of the rectum has been made between the ages of 65 and 70?**
**Captain, M. C., A. U. S.**

ANSWER.—The average length of life in untreated rectal cancer (adenocarcinoma) is about seventeen months.

## REFRACTORY ABSCESS OF THIGH

***To the Editor:*—A 2 year old child was recently seen with an abscessed cavity located in the upper and outer part of the left thigh. It was closed over when first seen, but the parents report that on at least four different occasions previously it had been incised and drained; in spite of packing and drainage, it never remained closed for more than a few days at a time. On curettement the cavity appeared to be entirely above the muscle sheath but extended to a depth of an inch and a half from the skin, passing somewhat medially across the anterior surface of the quadriceps. It drained well for a few days and has remained healed since. The pathologist's report on the scrapings obtained is as follows: "Gross description: several irregularly shaped pieces of yellowish, soft, fatty and connective tissue material, the largest piece about 1 cm. in its greatest measurement. Sections from a number of different places have essentially the same picture, with a lining composed of ill formed spherical masses of rather large cells grouped roughly as tubercles but with no giant cells. There is necrosis, in the center of which there are large numbers of polymorphonuclears and broken-up nuclear material. One partially formed giant cell is identified. Special stains for tubercle bacilli do not demonstrate any organisms. Careful search of the stained material reveals no fungi. Granulomatous inflammation of the soft tissues of the left thigh, probably tuberculous. Suggest probable origin in the bone or hip joint or extension of a psoas abscess. Please let me know the outcome of your further observations in this case." I had never seen this child before, since its parents had been living in California at the time of its birth and had returned to this locality only about six months before. They live on a farm, and the only close associates during the past six months have been the grandparents and two aunts, both of whom are young women less than 20 years of age. So far as the parents know, there was no contact with any case of tuberculosis while in California. Testing of the parents, a brother, the grandparents and the two aunts give negative reactions to the tuberculin test with purified protein derivative. The patient showed a definite reaction to the second strength of purified protein derivative. X-ray examination of the pelvis, lower spine and upper femurs shows no indication of bone disease. We are all somewhat puzzled as to a possible source of infection. Is there any further test that should be made? What treatment is advised? I have suggested ample rest, a nourishing diet and exercise not permitted to the point of extreme tiredness.**
**Ray S. Wycoff, M.D., Lexington, Neb.**

ANSWER.—The ordinary means of diagnosis have been well covered in this case, but the description of the scrapings certainly suggests tuberculosis. It is suggested that some of the material be sent to a laboratory for intraperitoneal injection into guinea pigs. The guinea pig is most susceptible to tubercle bacilli, and, while a negative result does not settle the question, a positive result would. The general suggestions for care are good; during the winter months cod liver oil would be a good thing for the child to have.

## ASYMMETRICAL BLOOD PRESSURE—THERAPY WITH THIOCYANATES

***To the Editor:*—Is there any explanation for the blood pressure being about 30 points higher, both systolic and diastolic, in the morning after sleeping than before retiring? A woman aged 55 has had high blood pressure for several years, from 200/140 to 150/85 in the left arm. The left arm usually is 15 to 20 points lower than the right. The difference in evening and morning blood pressure applies to both arms. The patient is having considerable vertigo and headache. She is taking potassium thiocyanate. The blood level of this drug is being tested weekly. What is considered a safe level? Should the dose be varied in order to obtain this level? What is considered the level of danger? What symptoms indicate toxicity?**
**Edward F. Hemminger, M.D., Upper Darby, Pa.**

ANSWER.—Asymmetry of the arterial tension in the two arms is not uncommon. Differences of 10 mm. of mercury or more in the systolic pressure and/or 5 mm. or more in the diastolic tension were observed in 15.7 per cent of a group of apparently healthy adults. Failure to realize that such asymmetry occurs frequently is undoubtedly due to the fact that the great majority of physicians fail to make observations on both arms. Recent studies have shown that the brachial systolic blood pressure is higher in the right than in the left in 70 per cent of normal persons and in 84 per cent of hypertensive patients. The degree of disparity increases with the degree of hypertension. The Amsterdams explain the frequent observation of lower tension in the left arm by pointing out that the anatomy of the aortic arch is such that the innominate artery, from which the right subclavian artery arises, is in direct line with the blood stream in its flow in the ascending aorta, whereas the left subclavian artery comes off the aorta at a greater angle. Thus many instances of differential tension may be essentially physiologic. Pathologic conditions associated with asymmetry of the blood pressure in the arms include cervical rib, aortitis, atrophy of an extremity such as that subsequent to injury, joint ankylosis or poliomyelitis, trophic disturbances such as may occur in tabes dorsalis, and localized arteriolar constriction.

It is unusual for the arterial tension to be higher immediately after rest and/or in the horizontal position. The observations of Gambill, Hines and Adson and of Sewell indicate that the pulse pressure tends to fall with a change from recumbency to an erect posture. The question does not state whether the morning observation was made with the patient recumbent or sitting erect. It is quite possible that the reflex rise in tension

which occurs with change in position from the horizontal to the vertical is exaggerated in the patient who has so obviously a variable spastic phase of hypertension. Gambill reports that his own arterial tension was almost uniformly higher in the morning than in the evening but offers no explanation of this phenomenon. It is characteristic for the arterial tension to fall considerably during sleep, and this fall is exaggerated in anxious apprehensive individuals. It is questionable whether the episodes of vertigo and cephalalgia described can be correlated with fluctuations of the arterial tension. Coincident anemia, which is common in hypertension, may decidedly aggravate such symptoms of cranial malcirculation.

The dose of potassium thiocyanate required to keep its concentration in the blood at a safe therapeutic level (5 to 10 mg. per hundred cubic centimeters) is extremely variable in different patients. Levels of 20 mg. or more are dangerously toxic. It must not be forgotton that the colorimetric method of Barker is none too accurate and that with levels around 15 mg. per hundred cubic centimeters of blood a toxic concentration may be approached. Though this drug is usually administered three times a day the blood concentration in most instances remains fairly constant throughout the day in patients receiving appropriate quantities. No correlation has been found to exist between the urinary output of thiocyanate and the daily intake or the blood concentration of the drug. The commoner symptoms of thiocyanate intoxication, in the usual order of their appearance, are muscular weakness, papular dermatitis, nausea, vomiting, mild fever, mental confusion and disorientation, aphasia, convulsions and coma. Thiocyanate is a safe vascular depressor substance only if used conservatively and with proper safeguards. The lowest blood concentration that yields satisfactory reduction of the arterial tension should be maintained. The margin between effective therapeutic levels and toxic levels is small. References:


Stieglitz, E. J., and Propst, D. W.: Differential Arterial Tension, *Am. J. M. Sc.* **184:** 336 (Sept.) 1932.

Amsterdam, B., and Amsterdam, A. L.: Disparity in Blood Pressures in Both Arms, New York State J. Med. **43:** 2294 (Dec. 1) 1943.

Stieglitz, E. J.: Abnormal Arterial Tension, New York, National Medical Book Company, 1935.

Gambill, E. E.; Hines, E. A., Jr., and Adson, A. W.: Circulation in Man in Certain Postures Before and After Extensive Sympathectomy for Essential Hypertension, *Am. Heart J.* **27:** 360 (March) 1944.

Sewell, H.: On the Clinical Significance of Postural Changes in the Blood Pressure, *Am. J. M. Sc.* **158:** 786, 1919.

Gambill, E. E.: Diurnal and Seasonal Variation of Blood Pressure, *Proc. Staff Meet., Mayo Clin.* **19:** 155 (March 22) 1944.

Grimson, K. S.; Kernodle, C. E., and Hill, H. C.: Hypertension, THE JOURNAL, Sept. 23, 1944, p. 218.

Stieglitz, E. J.: The Diagnosis and Treatment of Cardiovascular Disease, edited by William D. Stroud, Philadelphia, F. A. Davis Company, 1940, chapter 57.

Barker, M. H.: The Blood Cyanates in the Treatment of Hypertension, THE JOURNAL, March 7, 1936, p. 672.

Koffler, A.; Freireich, A. W., and Silverman, I. J.: Thiocyanate Therapy of Hypertension, *Am. Heart J.* **28:** 411 (Oct.) 1944.


## REMOVAL OF SCABS

***To the Editor:***—**What is the proper procedure in treating wounds that have been encrusted by scab formation? Some believe that the scabs of all wounds should be removed, while others maintain that if a scab is dry and solid with no serous accumulation underneath it should be left untouched until nature has completed healing underneath.**

**Gerhard W. Lorfeld, Captain, M. C., A. U. S.**

ANSWER.—Careful review of the extensive recent literature on the subject of treatment of wounds contains no reply to this query. The reason for this is obvious: "A dry scab with no serous accumulation underneath" no longer presents a problem; removal of such a scab will result in formation of another scab. Any suspicion of the existence of infection underneath the scab calls for its removal.

None of the bulletins issued by the Army and the Navy on the subject of treatment of the wounds contain any reference to the query.

## CALCULATION OF REFRACTION IN DISPLACED EYE

***To the Editor:***—**I am unable to find definite information regarding the change in refraction in the eye produced by displacement of the lens. Can you tell me where I can determine the change in the refractive power of a normal eye produced by a displacement backward of the lens of 1 mm.?**

**Lyman A. Copps, M.D., Marshfield, Wis.**

ANSWER.—If the lens is retroplaced 1 mm. so that the anterior surface lies 4.6 mm. behind the anterior surface of the cornea instead of 3.6 mm. (Gullstrand schematic eye), the eye will become hyperopic by more than 1 diopter. To determine the exact amount mathematically necessitates an entire recalculation for determination of the cardinal points. For guidance in such calculations the reader is referred to Duke-Elder's Textbook of Ophthalmology, volume 1, page 735, to A. C. Percival's The Prescribing of Spectacles, page 177, and to Tscherning's Physiologic Optics, page 29.

## INSECTICIDAL AEROSOLS

***To the Editor:***—**I understand that the gas freon is used to kill mosquitoes and was wondering if it had the ability to kill the insects that are found in houses and kennels, such as fleas, flies and moths. What amounts should be used figuring on the cubic feet of a room or building? I should appreciate any information you can give me on this or any similar fumigation for moths and other insects.**

**Charles A. Manahan, M.D., Vinton, Iowa.**

ANSWER.—The gas freon is not in itself used as an insecticide, but it is used as a carrier of insecticidal materials, such as pyrethrum extract and sesame oil in the aerosol method. Articles on this subject are as follows:


Goodhue, Lyle D.: Insecticidal Aerosol Production: Spraying Solutions in Liquefied Gases, *Indust. & Engin. Chem.* **34:** 1456 (Dec.) 1942.

Insecticides for the Army: The Aerosol Insecticide Program and Its Effects on the Insecticide Industry Now and After the War, *Soap* **18:** 91 (Nov.) 1942.

Goodhue, Lyle D.: Insecticidal Aerosols, in Pests and Their Control, vol. 11, No. 1, January 1943.


The first named article states that "an aerosol of pyrethrum extract and sesame oil produced by spraying a solution of these materials in dichlorodifluoromethane has shown considerable promise. This solution is prepared by dissolving 5 Gm. of a purified pyrethrum extract containing 20 per cent total pyrethrins and 2 Gm. of refined sesame oil per 93 Gm. of dichlorodifluoromethane. The solvent, which has a pressure near 90 pounds per square inch at room temperature, is an odorless, nontoxic, noninflammable gas, and the resulting aerosol may be used with safety in the presence of man and animals. Entomologists have tested this aerosol and find it very toxic to mosquitoes, especially yellow fever mosquitoes, Aedes aegypti (L.), which are killed in two minutes when as little as 5 mg. of total pyrethrins and 10 mg. of sesame oil are suspended in 1,000 cubic feet of air. House flies and other species of flies frequently found around livestock barns are easily controlled."

The aerosols containing pyrethrum extract are at present required by the armed forces, particularly for use against mosquitoes, and are not available for civilian use.

For information on moth control, U. S. Department of Agriculture Leaflet No. 145, entitled "Clothes Moths," should be consulted.

## DISCOLORATION OF SKIN FROM PERMANGANATE BATHS

***To the Editor:***—**Kindly advise whether twice daily bathing in solutions of potassium permanganate (125 grains to each bathful of water) for over a month could result in a generalized dermatitis with bronzing of the whole body and darkening of the sclera and of the skin of the face. The patient is a man.**

**Aaron N. Gorelik, M.D., Bronx, N. Y.**

ANSWER.—Such bathing could and ordinarily does produce a discoloration of the skin. A dermatitis could also be induced if the concentration of potassium permanganate was sufficiently strong to prove irritating. The darkening of the sclera doubtless would be produced in the same way as the discoloration of the skin. It is not likely that the permanganate would be absorbed through the skin and then carried to the sclera systemically; this chemical is so unstable as to preclude its carriage through all the organic material of the blood without being reduced.

## RESISTANT PINWORM INFECTION

***To the Editor:***—**For the past fourteen months the wife of an army officer has been under treatment at various stations for recurrent attacks of Oxyuris vermicularis infections. Therapy has followed the usual line such as various types of enemas, the use of enteric coated gentian violet tablets and the like. For the past four months these measures have been repeated with no degree of success. Hygienic measures have been adhered to rigidly. At no time has the stool examination revealed the presence of ova of Ascaris lumbricoides. The question has now been presented to this effect: Will removal of the appendix in its role as a possible harbor of refuge for the pinworms offer any degree of success in ultimate cure of this condition? Vaginal examination has not been done on this patient.**

**Captain, M. C., A. U. S.**

ANSWER.—Assuming the several diagnoses to have been based on specific identification of the eggs or individual pinworms, it appears somewhat improbable that periodic recurrences of infection after adequate approved treatment were likely to arise without reinfection. Resort to surgery in the absence of recognizable signs or symptoms pointing to the appendix seems to be unjustified at least before a most careful critical investigation into the personal habits and hygiene of the patient and the associated human environment. Such procedure, in view of the ready autoinoculability and self-limited character of pinworm infection without reinfection, with persistent use when indicated of such anthelmintics as gentian violet, offers more promise of ultimate success in treatment than resort to removal of the appendix on a chance that egg producing female worms may be temporarily lodged there.